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Rethinking the Indus myths

**A comparative re-evaluation of the Indus
Civilisation as an alternative paradigm in the
organisation and structure of
early complex societies.**

Volume 2 of 2: Appendices, Figures and Tables.

Edward Cork

**Ph.D Thesis, Submitted to the Department of
Archaeology, Durham University.**

2006

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Contents

Contents	...303
List of Figures	...304
List of Tables	...312
Appendix A: Architectural Data Used In Chapter 3	...313
Appendix B: Kolmogorov-Smirnov Tests On House Size Distributions	...345
Appendix C: Metalwork Examined In The Lothal Site Museum And Archive	...348
Appendix D: Assessing The Reliability Of Published Indus Metalwork Data	...358
Appendix E: Metalwork Data	...363
Appendix F: Elemental Composition Data Used In Chapter 4	...399
Appendix G: Problems Recreating Adams' Influential 'Four-Tiered' Settlement Hierarchy	...417
Appendix H: Problems With Using Sites On The Indus Floodplain In Settlement Analyses	...419
Note To Metalwork Illustrations	...421
Figures	...422
Tables	...

List of Figures

Fig. 1.1.	Dateline of various areas discussed.	...422
Fig. 3.1.	Site plan of Mohenjo Daro showing excavated areas.	...423
Fig. 3.2.	Sarcina's typology of houses at Mohenjo Daro.	...424
Fig. 3.3.	Site plan of Nausharo showing relevant areas.	...425
Fig. 3.4.	Site plan of Lothal showing relevant areas.	...426
Fig. 3.5.	Site plan of Asmar showing relevant areas.	...427
Fig. 3.6.	Site plan of Khafajah showing relevant areas.	...428
Fig. 3.7.	Site plan of Ur showing relevant areas.	...429
Fig. 3.8.	Site plan of Nippur showing relevant areas.	...430
Fig. 3.9.	Plan of the VS area at Mohenjo Daro showing the problems in delineating buildings.	...431
Fig. 3.10.	Plan of the DK-G (S) area (Intermediate Period) at Mohenjo Daro.	...432
Fig. 3.11.	Plan of the DK-G (S) area (Late Period) at Mohenjo Daro.	...433
Fig. 3.12.	Plan of the DK-G (N) area (Late Period) at Mohenjo Daro.	...434
Fig. 3.13.	Plan of the HR area at Mohenjo Daro.	...435
Fig. 3.14.	Plan of the Moneer area at Mohenjo Daro.	...436
Fig. 3.15.	Plan of the VS area at Mohenjo Daro.	...437
Fig. 3.16.	Plan of Block 2 at Nausharo.	...438
Fig. 3.17.	Plan of the 'merchant's house' at Lothal.	...439
Fig. 3.18.	Plan of levels Va at Asmar.	...440
Fig. 3.19.	Plan of levels Vb (left) and Vc (right) at Asmar.	...441
Fig. 3.20.	Plan of the 'palace' area at Asmar.	...442
Fig. 3.21.	Plan of 'Houses 3' at Khafajah.	...443
Fig. 3.22.	Plan of 'Houses 2' at Khafajah.	...444
Fig. 3.23.	Plan of the AH area at Ur.	...445
Fig. 3.24.	Plan of the EM area at Ur.	...446
Fig. 3.25.	Plan of the TA area at Nippur.	...447
Fig. 3.26.	Plan of the TB area at Nippur.	...448
Fig. 3.27.	Building sizes at Mohenjo Daro (HR, VS, DK-G and Moneer areas).	...449
Fig. 3.28.	Building sizes at Nausharo Block 2 and Lothal 'A' Block.	...449

Fig. 3.29.	Building sizes at Asmar levels Va to Vc.	...450
Fig. 3.30.	Building sizes at Khafajah 'Houses 2' to 'Houses 3'.	...450
Fig. 3.31.	Building sizes at Ur, areas AH and EM.	...451
Fig. 3.32.	Building sizes at Nippur, areas TA and TB.	...451
Fig. 3.33.	Comparison of house sizes (as percentage of total site population) at Mohenjo Daro, Ur, Khafajah and Asmar.	...452
Fig. 3.34.	Comparison of house sizes at Mohenjo Daro and Ur (as percentage of total houses at each site).	...452
Fig. 3.35.	Different areas of Mohenjo Daro compared.	...453
Fig. 3.36.	House sizes at Mohenjo Daro, DK-G (N & S).	...454
Fig. 3.37.	House sizes at Mohenjo Daro, VS-A and VS-B.	...454
Fig. 3.38.	House sizes at Mohenjo Daro, HR-A and HR-B.	...455
Fig. 3.39.	House sizes at Mohenjo Daro, Moneer Area.	...455
Fig. 3.40.	House sizes at Ur, area AH.	...456
Fig. 3.41.	House sizes at Ur, area EM.	...456
Fig. 3.42.	Size distribution of house types at Mohenjo Daro, HR area.	...457
Fig. 3.43.	Size distribution of house types at Mohenjo Daro, DK-G area.	...457
Fig. 3.44.	Size distribution of house types at Mohenjo Daro, VS area.	...458
Fig. 3.45.	Size distribution of house types at Mohenjo Daro, Moneer area.	...458
Fig. 3.46.	Size distribution of house types at Asmar.	...459
Fig. 3.47.	Size distribution of house types at Khafajah.	...459
Fig. 3.48.	Size distribution of house types at Ur, area AH.	...460
Fig. 3.49.	Size distribution of house types at Ur, area EM.	...460
Fig. 3.50.	Size distribution of house types at Nippur.	...461
Fig. 3.51.	The proportion of extended and nuclear family houses at various sites.	...462
Fig. 3.52.	Plan of the DK-G (S) area (Intermediate Period) at Mohenjo Daro, showing the location of building types.	...463
Fig. 3.53.	Plan of the DK-G (S) area (Late Period) at Mohenjo Daro, showing the location of building types.	...464
Fig. 3.54.	Plan of the DK-G (N) area (Late Period) at Mohenjo Daro, showing the location of building types.	...465
Fig. 3.55.	Plan of the HR area at Mohenjo Daro, showing the location of building types.	...466
Fig. 3.56.	Plan of the Moneer area at Mohenjo Daro, showing the location of building types.	...469

Fig. 3.57.	Plan of the VS area at Mohenjo Daro, showing the location of building types.	...468
Fig. 3.58.	Plan of levels Va at Asmar, showing the location of building types.	...469
Fig. 3.59.	Plan of levels Vb (left) and Vc (right) at Asmar, showing the location of building types.	...470
Fig. 3.60.	Plan of the 'palace' area at Asmar, showing the location of building types.	...471
Fig. 3.61.	Plan 'of Houses 3' at Khafajah, showing the location of building types.	...472
Fig. 3.62.	Plan of 'Houses 2' at Khafajah, showing the location of building types.	...473
Fig. 3.63.	Plan of the AH area at Ur, showing the location of building types.	...474
Fig. 3.64.	Plan of the EM area at Ur, showing the location of building types.	...475
Fig. 3.65.	Plan of the TA area at Nippur, showing the location of building types.	...476
Fig. 3.66.	Plan of the TB area at Nippur, showing the location of building types.	...477
Fig. 3.67.	Conventions used in this chapter for depicting access patterns.	...478
Fig. 3.68.	Distributed and non-distributed access patterns.	...478
Fig. 3.69.	Proportion of buildings with staircases in the sampled sites.	...479
Fig. 3.70.	Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Southern Section).	...480
Fig. 3.71.	Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Southern Section).	...481
Fig. 3.72.	Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Southern Section).	...482
Fig. 3.73.	Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Northern Section).	...483
Fig. 3.74.	Permeability map and RRA values for Houses in Mohenjo Daro HR-A.	...484
Fig. 3.75.	Permeability map and RRA values for Houses in Mohenjo Daro HR-B.	...485
Fig. 3.76.	Permeability map and RRA values for Houses in Mohenjo Daro HR-B.	...486

Fig. 3.77.	Permeability map and RRA values for Houses in Mohenjo Daro Moneer area.	...487
Fig. 3.78.	Permeability map and RRA values for Houses in Mohenjo Daro Moneer area.	...488
Fig. 3.79.	Permeability map and RRA values for Houses in Mohenjo Daro VS-A.	...489
Fig. 3.80.	Permeability map and RRA values for Houses in Mohenjo Daro VS-A.	...490
Fig. 3.81.	Permeability map and RRA values for Houses in Mohenjo Daro VS-B.	...491
Fig. 3.82.	Permeability map and RRA values for Houses in Asmar Vc.	...492
Fig. 3.83.	Permeability map and RRA values for Houses in Asmar Vb.	...493
Fig. 3.84.	Permeability map and RRA values for Houses in Asmar Vb, and adjacent to the Early Northern Palace.	...494
Fig. 3.85.	Permeability map and RRA values for Houses in Asmar Va.	...495
Fig. 3.86.	Permeability map and RRA values for Houses in Asmar Va.	...496
Fig. 3.87.	Permeability map and RRA values for Houses in Asmar Va.	...497
Fig. 3.88.	Permeability map and RRA values for Houses in Asmar Va.	...498
Fig. 3.89.	Permeability map and RRA values for Houses in Khafajah 'Houses 3'.	...499
Fig. 3.90.	Permeability map and RRA values for Houses in Khafajah 'Houses 2'.	...500
Fig. 3.91.	Permeability map and RRA values for Houses in Ur EM, Gay Street.	...501
Fig. 3.92.	Permeability map and RRA values for Houses in Ur EM, Quiet Street.	...502
Fig. 3.93.	Permeability map and RRA values for Houses in Ur EM, New Street and Ur AH, Store Street.	...503
Fig. 3.94.	Permeability map and RRA values for Houses in Ur AH, Broad Street, Boundary Street, Baker's Square and Old Street.	...504
Fig. 3.95.	Permeability map and RRA values for Houses in Ur AH, Straight Street.	...505
Fig. 3.96.	Permeability map and RRA values for Houses in Ur AH, Niche Lane.	...506
Fig. 3.97.	Permeability map and RRA values for Houses in Ur AH, Paternoster Row.	...507

Fig. 3.98.	Permeability map and RRA values for Houses in Ur AH, Church Lane.	...508
Fig. 3.99.	Permeability map and RRA values for Houses in Ur AH, Church Lane.	...509
Fig. 3.100.	Permeability map and RRA values for Houses in Nippur TA.	...510
Fig. 3.101.	Permeability map and RRA values for Houses in Nippur TB.	...511
Fig. 3.102.	RRA values for houses at Mohenjo Daro, Asmar and Khafajah.	...512
Fig. 3.103.	RRA values for houses at Mohenjo Daro, Nippur and Ur.	...512
Fig. 3.104.	Maximum depth values for houses at Mohenjo Daro, Asmar and Khafajah.	...513
Fig. 3.105.	Maximum depth values for houses at Mohenjo Daro, Nippur and Ur.	...513
Fig. 3.106.	Mean depth values for houses at Mohenjo Daro, Asmar and Khafajah.	...514
Fig. 3.107.	Mean depth values for houses at Mohenjo Daro, Nippur and Ur.	...514
Fig. 3.108.	Permeability maps for 'bathing platforms' at Mohenjo Daro.	...515
Fig. 3.109.	Permeability maps for 'bathing platforms' at Mohenjo Daro.	...516
Fig. 3.110.	Permeability maps for wells at Mohenjo Daro.	...517
Fig. 3.111.	Permeability maps for wells at Mohenjo Daro.	...518
Fig. 3.112.	Permeability maps for 'chapels' at Ur.	...519
Fig. 3.113.	Permeability maps for 'chapels' at Ur.	...520
Fig. 3.114.	Permeability maps for 'chapels' at Ur.	...521
Fig. 3.115.	Permeability maps for toilets at Ur.	...522
Fig. 3.116.	Permeability maps for toilets at Ur.	...523
Fig. 3.117.	Depth levels of courtyards.	...524
Fig. 3.118.	RA values for courtyards at Asmar, Khafajah and Mohenjo Daro.	...525
Fig. 3.119.	RA values for courtyards at Ur, Nippur and Mohenjo Daro.	...525
Fig. 3.120.	% of the total control value for the house held by courtyards at Mohenjo Daro, Asmar and Khafajah.	...526
Fig. 3.121.	% of the total control value for the house held by courtyards at Mohenjo Daro, Ur and Nippur.	...526
Fig. 3.122.	Comparison of the control values of different facilities at Ur and Mohenjo Daro.	...527
Fig. 3.123.	RA Values from different points within houses at Mohenjo Daro.	...527
Fig. 3.124.	RA Values from different points within houses at Ur.	...528

Fig. 3.125.	The trend for 'chapels' at Ur with higher control values to derive from houses with more rooms.	...528
Fig. 3.126.	Examples of 'stalls' 'extended family' houses and 'nuclear family' houses.	...529
Fig. 4.1.	'Dancing Girl' figurine from Mohenjo Daro.	...530
Fig. 4.2.	The proportion of metalwork at sites falling into the 'vessels' category.	...531
Fig. 4.3.	Proportion of overall assemblage composed of 'tools', 'tool/weapons' and 'weapons' at each site.	...532
Fig. 4.4.	Proportion of overall assemblage composed of 'personal adornment' at each site.	...533
Fig. 4.5.	Figurines from Mesopotamia and Iran.	...534
Fig. 4.6.	Harappan figurines.	...535
Fig. 4.7.	Distribution of different types of 'tools' at each site.	...536
Fig. 4.8.	Different types of chisel and drill.	...537
Fig. 4.9.	Different types of digging tool.	...538
Fig. 4.10.	Examples of typical 'weapons'.	...539
Fig. 4.11.	Harappan socketed axes.	...540
Fig. 4.12.	Most common types of axe at each site.	...541
Fig. 4.13.	Daggers and knives.	...542
Fig. 4.14.	Spears and arrows.	...543
Fig. 4.15.	The number of arrows at Indus sites.	...544
Fig. 4.16.	Distribution of different types of 'personal adornment' at each site.	...545
Fig. 4.17.	Harappan pins.	...546
Fig. 4.18.	Pins from Mesopotamia, Iran and Central Asia.	...547
Fig. 4.19.	Bangles and rings.	...548
Fig. 4.20.	Controlled manufacture of stoneware bangles. From Halim and Vidale (1984).	...549
Fig. 4.21.	Harappan 'vessels'.	...550
Fig. 4.22.	Mesopotamian 'vessels'.	...551
Fig. 4.23.	'Vessels' from Hissar and Susa.	...552
Fig. 4.24.	'Vessels' from Shahdad and Egypt.	...553
Fig. 4.25.	Ceramic analogues of metal 'vessels' from the Indus.	...554
Fig. 4.26.	Proportion of overall assemblage composed of 'toiletry' at each site.	...555
Fig. 4.27.	Examples of 'toiletry' items.	...556

Fig. 4.28.	Miscellaneous objects.	...557
Fig. 4.29.	Alloying levels in Indus metalwork (all sites).	...558
Fig. 4.30.	Alloying levels in Indus metalwork (sites in the Greater Indus Valley).	...558
Fig. 4.31.	Alloying levels in Indus metalwork (sites in Gujarat).	...559
Fig. 4.32.	Alloying levels in Mesopotamian metalwork (Tell Brak, Uruk, Khafajah, Kish 'A' Mound, Kish 'A' Cemetery, Ur Royal Cemetery).	...559
Fig. 4.33.	Alloying levels in Iranian metalwork (Susa).	...560
Fig. 4.34.	Alloying levels in Persian Gulf metalwork (Tell Abraq).	...560
Fig. 4.35.	Alloying levels in Persian Gulf metalwork from settlement contexts.	...561
Fig. 4.36.	Alloying levels in Persian Gulf metalwork from funerary Contexts.	...561
Fig. 4.37.	Levels of tin in Indus tools.	...562
Fig. 4.38.	Levels of tin in Indus weapons.	...562
Fig. 4.39.	Levels of tin in Indus personal adornment.	...562
Fig. 4.40.	Levels of tin in miscellaneous Indus metalwork.	...563
Fig. 4.41.	Levels of arsenic in Indus tools.	...563
Fig. 4.42.	Levels of arsenic in Indus weapons.	...563
Fig. 4.43.	Levels of arsenic in Indus personal adornment.	...564
Fig. 4.44.	Levels of arsenic in miscellaneous Indus metalwork.	...564
Fig. 4.45.	Levels of lead in Indus tools.	...564
Fig. 4.46.	Levels of lead in Indus weapons.	...565
Fig. 4.47.	Levels of lead in Indus personal adornment.	...565
Fig. 4.48.	Levels of lead in miscellaneous Indus metalwork.	...565
Fig. 4.49.	Levels of tin in weapons from Susa.	...566
Fig. 4.50.	Levels of tin in metalwork from Susa.	...566
Fig. 4.51.	Levels of arsenic in weapons from Susa.	...567
Fig. 4.52.	Levels of arsenic in metalwork from Susa.	...567
Fig. 4.53.	Levels of lead in weapons from Susa.	...568
Fig. 4.54.	Levels of lead in metalwork from Susa.	...568
Fig. 4.55.	Levels of arsenic in Mesopotamian metalwork.	...569
Fig. 4.56.	Levels of tin in Mesopotamian metalwork.	...569
Fig. 4.57.	Levels of lead in metalwork from Uruk.	...570
Fig. 4.58.	Levels of tin in metalwork at Abraq.	...570
Fig. 4.59.	Levels of arsenic in metalwork at Abraq.	...571

Fig. 4.60.	Levels of lead metalwork at Abraç.	...571
Fig. 4.61.	Distribution of axe technologies (as % of overall site assemblage)...	572
Fig. 4.62.	Relative proportions of pins and bangles (excluding Egypt).	...572
Fig. 4.63.	Male bust from HR area with visible hairpin.	...573
Fig. 5.1.	Possehl's five Indus 'Domains'.	...574
Fig. 5.2.	Distribution of all Mature Harappan sites, displaying a marked convex trend.	...575
Fig. 5.3.	Early Harappan sites in Possehl's database.	...576
Fig. 5.4.	Mature Harappan sites in Possehl's database.	...577
Fig. 5.5.	Late Harappan sites in Possehl's database.	...578
Fig. 5.6.	The equidistance of some large Harappan sites.	...579
Fig. 5.7.	The four Indus areas analysed in this study.	...580
Fig. 5.8.	Sites in the Baluchistan area.	...581
Fig. 5.9.	Sites in the Cholistan area.	...582
Fig. 5.10.	Sites in the Saurashtra and Kutch area.	...583
Fig. 5.11.	Sites in the Haryana area.	...584
Fig. 5.12.	Distribution of site sizes in the Indus Civilisation.	...585
Fig. 5.13.	Distribution of site sizes in the Uruk- Warka survey area.	...585
Fig. 5.14.	Distribution of site sizes in Nippur-Adab survey area.	...586
Fig. 5.15.	Distribution of EDI site sizes in the Nippur-Adab survey region, after Adams (1981: 84).	...586
Fig. 5.16.	Site size hierarchies for the Baluchistan area.	...587
Fig. 5.17.	Site size hierarchies for the Cholistan area.	...587
Fig. 5.18.	Site size hierarchies in the Haryana area.	...588
Fig. 5.19.	Site size hierarchies in the Saurashtra area.	...589
Fig. 5.20.	Site size hierarchies in the Nippur-Adab area, after Adams (1981)...	590
Fig. 5.21.	Site size hierarchies in the Uruk-Warka area, after Adams (1981)...	591
Fig. 5.22.	Settlement distribution weighted by % of total settled area in the Nippur-Adab area, after Adams (1981: 73).	...592
Fig. 5.23.	Settlement distribution weighted by % of total settled area in the Uruk-Warka area, after Adams (1981: 73).	...593
Fig. 5.24.	Settlement distribution weighted by % of total settled area in the Baluchistan area, using Adams' size categories.	...594
Fig. 5.25.	Settlement distribution weighted by % of total settled area in the Cholistan area, using Adams' size categories.	...595
Fig. 5.26.	Settlement distribution weighted by % of total settled	

	area in the Haryana area, using Adams' size categories.	...596
Fig. 5.27.	Settlement distribution weighted by % of total settled area in the Saurashtra area, using Adams' size categories.	...597
Fig. 5.28.	Settlement distribution weighted by % of total settled area in the Baluchistan area.	...598
Fig. 5.29.	Settlement distribution weighted by % of total settled area in the Cholistan area.	...599
Fig. 5.30.	Settlement distribution weighted by % of total settled area in the Haryana area.	...600
Fig. 5.31.	Settlement distribution weighted by % of total settled area in the Saurashtra area.	...601
Fig. 5.32.	Rank-size plot for Cholistan Area sites surveyed by Mughal.	...603
Fig. 5.33.	Rank-size plot for Haryana Area.	...603
Fig. 5.34.	Rank-size plot for Saurashtra and Kutch Area.	...604
Fig. 5.35.	Rank-size plot for Baluchistan Area.	...604
Fig. 5.36.	Rank-size plot for Diyala sites surveyed by Adams (1965).	...605
Fig. 5.37.	Rank-size plot for Jezira sites surveyed by Wilkinson and Tucker (1995).	...605
Fig. 5.38.	Rank-size plot for Nippur-Adab sites surveyed by Adams (1981)....	606
Fig. 5.39.	Rank-size plot for Uruk sites surveyed by Adams and Nissen (1972).	...606

List of Tables

Table 3.1.	Mean size and room numbers at the sampled sites.	...607
Table 3.2.	Structures identified as stalls following Henrickson (1981).	...607
Table 3.3.	Frequency of external entrances to buildings.	...608
Table 3.4.	Frequency of internal entrances to buildings.	...608
Table 4.1.	Types of 'weapons' and their locations.	...609
Table 4.2.	The presence of metal vessels associated with liquids and drinking.	...609
Table 4.3.	Contents of metal hoard from Tell Sifr (Loftus hoard).	...610
Table 4.4.	Contents of selected metal hoards from Harappa, Mohenjo Daro and Chanhudaro.	...610
Table 4.5.	Compositional differences of axe types at Susa.	...611
Table 5.1.	Unclear site sizes in Adams' databases.	...612
Table 5.2.	Size and site densities of the compared areas.	...612
Table 5.3.	Monte-Carlo simulation results for rank-size analyses.	...613
Table 6.1.	Tendencies of corporate and network power strategies, after Feinman et al (2000: 453).	...614

Appendix A: Architectural Data Used In Chapter 3.

Part 1: Size of buildings

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
1	Asmar	ENP			1		12	245.1921	Partial structure
2	Asmar	ENP			2		12	228.1728	Unclear connection to the street
3	Asmar	ENP			3		15	388.9945	Partial structure
4	Asmar	ENP			ENP		23	825.095	
5	Asmar	MNP			MNP		43	1860.4992	
6	Asmar	Va			VI		5	89.5421	
7	Asmar	Va			VIII		3	46.6264	
8	Asmar	Va			V		3	49.5083	
9	Asmar	Va			I		10	155.5036	
10	Asmar	Va			II		11	246.678	
11	Asmar	Va			X		4	59.3989	
12	Asmar	Va			XI		4	71.1821	
13	Asmar	Va			XII		2	52.9707	
14	Asmar	Va			XVI		3	50.975	
15	Asmar	Va			XVII		3	69.9125	
16	Asmar	Va			XVIII		4	53.2681	
17	Asmar	Va			XIX		4	76.7359	
18	Asmar	Va			XX		9	147.1553	
19	Asmar	Va			XXI		5	90.2889	
20	Asmar	Va			XXII		10	144.982	
21	Asmar	Va			XV		4	59.2766	
22	Asmar	Va			XIV		3	57.2595	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
23	Asmar	Va			XIII		3	61.7052	
24	Asmar	Va			XXVI		5	54.5777	
25	Asmar	Va			XXV		13	283.2842	
26	Asmar	Va			XXIII		8	151.146	
27	Asmar	Va			XXIV		5	104.985	
28	Asmar	Vb			VI		6	94.7834	
29	Asmar	Vb			V		6	87.6884	
30	Asmar	Vb			I		10	158.3872	
31	Asmar	Vb			II		12	250.5902	
32	Asmar	Vb			VII		8	184.2081	
33	Asmar	Vc			I		9	163.0253	
34	Asmar	Vc			II		12	212.4676	
35	Asmar	Vc			III		4	77.4294	
36	Khafajah	Houses 2			XLV		9	360.9124	
37	Khafajah	Houses 2			XLVI		16	542.4868	
38	Khafajah	Houses 2			XLVI a		6	95.2714	
39	Khafajah	Houses 2			XLIX		4	102.6596	
40	Khafajah	Houses 2			XLVIII		7	146.0657	
41	Khafajah	Houses 2			XLVII		7	147.2329	
42	Khafajah	Houses 2			LIIa		5	121.0166	
43	Khafajah	Houses 2			LIII		5	74.4784	
44	Khafajah	Houses 2			LI a		3	55.1113	
45	Khafajah	Houses 2			LI		4	97.4935	
46	Khafajah	Houses 2			L		8	168.184	
47	Khafajah	Houses 2			1		1	27.7343	
48	Khafajah	Houses 2			2		2	44.6265	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
49	Khafajah	Houses 2			3		2	48.6659	
50	Khafajah	Houses 2			4		2	39.857	
51	Khafajah	Houses 2			5		1	26.9021	
52	Khafajah	Houses 2			6		1	25.9784	
53	Khafajah	Houses 3			XLIII		6	199.7995	
54	Khafajah	Houses 3			XLII		2	63.5661	
55	Khafajah	Houses 3			Small Temple		3	183.8767	
56	Khafajah	Houses 3			XLI		12	302.7999	
57	Khafajah	Houses 3			XLIIIa		3	70.2078	House to south of XLIII deemed to be separate as there are no connecting doorways on any plans.
58	Lothal		Street 1		Merchant's House		10	93.1078	No doors; unclear relationship of buildings at back.
59	Lothal		Street 1		other house		8	78.8916	Reconstructed
60	Mo. Daro	DK-G (N)		13	II	Late Ib	8	126.7078	
61	Mo. Daro	DK-G (N)		14	II	Late Ib	11	107.9004	
62	Mo. Daro	DK-G (N)		14	III	Late Ia	8	90.697	
63	Mo. Daro	DK-G (N)		14	IV	Late Ia	6	95.4531	
64	Mo. Daro	DK-G (N)		15	IV	Late Ia	5	80.3245	
65	Mo. Daro	DK-G (N)		15	V	Late Ib - II	4	42.3414	
66	Mo. Daro	DK-G (N)		15	VI	Late Ia	4	49.0577	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
67	Mo. Daro	DK-G (N)		16	III	Late Ib	8	79.7962	
68	Mo. Daro	DK-G (N)		22		Late Ib	14	263.6925	
69	Mo. Daro	DK-G (N)		21	II	Late Ib	13	90.2087	Published plan may conflate walls of different periods into a single structure.
70	Mo. Daro	DK-G (N)		21	III	Late II	6	85.6402	
71	Mo. Daro	DK-G (S)		10	I	Late II	9	224.4709	
72	Mo. Daro	DK-G (S)		1	'palace'	Interm. II	50	1675.5905	
73	Mo. Daro	DK-G (S)		10	III	Late Ib	13	214.9458	
74	Mo. Daro	DK-G (S)		10	IV	Late II	14	272.8705	
75	Mo. Daro	DK-G (S)		9	VII	Late II	11	213.2627	
76	Mo. Daro	DK-G (S)		9	VI	Late Ib	12	163.6674	
77	Mo. Daro	DK-G (S)		9A	V	Late II	7	90.296	
78	Mo. Daro	DK-G (S)		9A	VIII	Late II	21	266.7283	
79	Mo. Daro	DK-G (S)		6A		Late II	9	234.6769	
80	Mo. Daro	DK-G (S)		6	III	Late II	19	249.2481	Plan confused and may have contained shops (Mackay 1938: 74), not suitable from access.

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
81	Mo. Daro	DK-G (S)		6	II	Late II	5	102.9344	
82	Mo. Daro	DK-G (S)		8	I	Late Ia	9	125.724	
83	Mo. Daro	DK-G (S)		7	VI	Late Ib	6	67.8651	
84	Mo. Daro	DK-G (S)		7	VIII	Late Ib	9	97.2924	
85	Mo. Daro	DK-G (S)		10	III	Interm.	11	212.8205	
86	Mo. Daro	DK-G (S)		7	II	Interm.	8	121.4118	
87	Mo. Daro	DK-G (S)		7	VI	Interm.	4	68.9443	
88	Mo. Daro	DK-G (S)		5	I	Interm.	8	151.8374	
89	Mo. Daro	DK-G (S)		5	II	Interm.	9	104.572	
90	Mo. Daro	DK-G (S)		5	III	Interm.	2	49.4196	
91	Mo. Daro	HR-A		3	VIII	Interm.	19	546.5313	Depth calculations ignore conjectural back entrance on Pl.IV, Marshall 1931
92	Mo. Daro	HR-A		3	VII	Interm.	10	156.7082	
93	Mo. Daro	HR-A		3	V	Interm.	15	212.1119	
94	Mo. Daro	HR-A		2	II		18	296.8962	
95	Mo. Daro	HR-A		1	I		23	689.7989	23 in earlier phase, 39 later. See Jansen in SAA 1983: 170.
96	Mo. Daro	HR-B		5	XXIII	Interm.	19	275.5095	Position of 8 in relation to 7 and 9 unclear. Relationships of 11 and 12 to 2 also assumed.

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
97	Mo. Daro	HR-B		2	XII		9	127.5226	
98	Mo. Daro	HR-B		2	VI	Interm.	7	87.9321	
99	Mo. Daro	HR-B		2	IX	Interm.	12	243.2619	
100	Mo. Daro	HR-B		2	X	Interm.	17	384.7503	
101	Mo. Daro	HR-B		2	XI	Interm.	14	195.8253	
102	Mo. Daro	HR-B		3	XVI		15	238.9099	
103	Mo. Daro	HR-B		3	XVII		8	147.3679	
104	Mo. Daro	HR-B		5	XXXII		10	76.0624	
105	Mo. Daro	HR-B		5	XXXIII		2	30.4374	
106	Mo. Daro	HR-B		5	XXXIV		2	30.1657	
107	Mo. Daro	HR-B		5	XXXV		2	30.7192	
108	Mo. Daro	HR-B		5	XXXVI/XXXVII		2	48.3202	
109	Mo. Daro	HR-B		5	XXXVIII		4	39.0105	
110	Mo. Daro	HR-B		5	XLII		3	42.4707	
111	Mo. Daro	HR-B		5	XLV		2	25.3971	
112	Mo. Daro	HR-B		5	XLVI		4	50.7257	
113	Mo. Daro	HR-B		5	XLVII		4	53.7652	
114	Mo. Daro	HR-B		5	XLI		4	63.8862	
115	Mo. Daro	HR-B		7	LII		2	36.762	
116	Mo. Daro	HR-B		7	LIII		3	58.0729	
117	Mo. Daro	HR-B		7	LIV		6	89.2853	
118	Mo. Daro	HR-B		9	LXVI		11	118.2311	
119	Mo. Daro	HR-B		9	LXV		4	57.9883	
120	Mo. Daro	HR-B		2	VI a	Interm.	6	59.9318	
121	Mo. Daro	Moneer		A	I	Resurvey	9	128.9545	
122	Mo. Daro	Moneer		A	III	Resurvey	4	52.5675	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
123	Mo. Daro	Moneer		A	III	Resurvey	4	47.2415	This house a part of a block which might have been a single building
124	Mo. Daro	Moneer		A	VI	Resurvey	7	138.7003	This house a part of a block which might have been a single building
125	Mo. Daro	Moneer		A	IX	Resurvey	16	183.4989	This house a part of a block which might have been a single building
126	Mo. Daro	Moneer		B	VII	Resurvey	8	145.6743	
127	Mo. Daro	Moneer		B	IV	Resurvey	13	173.0336	
128	Mo. Daro	Moneer		B	V	Resurvey	11	152.0889	
129	Mo. Daro	Moneer		B	III	Resurvey	14	258.4299	
130	Mo. Daro	Moneer		B	II	Resurvey	14	179.3658	
131	Mo. Daro	Moneer		E	I	Resurvey	15	244.4529	
132	Mo. Daro	Moneer		E	II	Resurvey	7	179.771	
133	Mo. Daro	Moneer		A	II2	Resurvey	7	67.5623	
134	Mo. Daro	VS-A			XIX		14	229.6201	
135	Mo. Daro	VS-A		2	XIII		29	405.2186	
136	Mo. Daro	VS-A		1	II		11	214.6473	
137	Mo. Daro	VS-A		2	VIII		11	197.9469	
138	Mo. Daro	VS-A		2	XVII		17	213.3439	
139	Mo. Daro	VS-A		3	XVIIIa		5	74.6408	
140	Mo. Daro	VS-A		3	XVIII		8	148.3475	
141	Mo. Daro	VS-A		4	XXIII		7	126.2203	
142	Mo. Daro	VS-A		4	XXIV		13	149.7642	
143	Mo. Daro	VS-A		4	XXVI		14	145.9367	
144	Mo. Daro	VS-A		4	XXV		19	246.9096	
145	Mo. Daro	VS-A		1	V		11	219.1752	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m ²)	Comments
146	Mo. Daro	VS-B		1	II		4	102.2072	
147	Mo. Daro	VS-B		2	III		5	107.7862	
148	Mo. Daro	DK-G (N)		15	VI a	Late Ia	3	48.2375	
149	Nausharo	S. Mound		2	12		5	68.783	
150	Nausharo	S. Mound		2	9		6	88.1471	
151	Nausharo	S. Mound		2	11		12	166.6809	
152	Nausharo	S. Mound		2	1		8	86.7055	
153	Nausharo	S. Mound		2	2(a+b)		6	67.6477	
154	Nausharo	S. Mound		2	3		4	48.1576	
155	Nausharo	S. Mound		2	4		7	91.0117	
156	Nausharo	S. Mound		2	5		5	76.5808	
157	Nausharo	S. Mound		2	6		5	55.0038	
158	Nausharo	S. Mound		2	7		3	55.2248	
159	Nausharo	S. Mound		2	8		2	42.6981	
160	Nausharo	S. Mound		2	10		6	69.9329	
161	Nippur	TA			E		4	55.7547	Incomplete plan; house may be deeper.
162	Nippur	TA			F		6	76.3739	
163	Nippur	TA			G		3	47.2538	
164	Nippur	TA			H		5	62.3655	House reconstructed on basis of houses E and F.
165	Nippur	TA			I		10	113.2523	
166	Nippur	TB			D		7	127.8153	
167	Nippur	TB			T		3	41.7348	
168	Nippur	TB			C		12	212.5171	
169	Ur	AH	Baker's Sq.		Ib		9	117.3801	
170	Ur	AH	Bazaar Alley		I		2	35.6377	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
171	Ur	AH	Bazaar Alley		II		3	40.0133	
172	Ur	AH	Bazaar Alley		III		2	27.9897	
173	Ur	AH	Boundary St.		I/ III		12	262.0595	
174	Ur	AH	Broad St.		I		10	175.3466	
175	Ur	AH	Church Lane		XV		9	142.8508	
176	Ur	AH	Church Lane		XIII		14	270.8925	
177	Ur	AH	Church Lane		XI		8	109.0875	
178	Ur	AH	Church Lane		V		13	244.356	
179	Ur	AH	Church Lane		III		5	134.3927	
180	Ur	AH	Church Lane		IX		16	292.1599	
181	Ur	AH	Church Lane		VII		10	207.8397	
182	Ur	AH	Church Lane		I		7	108.6391	
183	Ur	AH	Niche Lane		II		2	44.5341	
184	Ur	AH	Niche Lane		III		5	67.2678	
185	Ur	AH	Niche Lane		V		3	90.016	
186	Ur	AH	Niche Lane		VII		1	22.108	
187	Ur	AH	Niche Lane		IX		1	13.2042	
188	Ur	AH	Niche Lane		IV		9	180.0562	
189	Ur	AH	Old St.		I		8	224.533	The door entering No III Straight Street is blocked.
190	Ur	AH	Paternoster Row		XI		21	474.5102	
191	Ur	AH	Paternoster Row		III		8	130.3262	
192	Ur	AH	Paternoster Row		VII		3	53.0365	
193	Ur	AH	Paternoster Row		V		4	54.6185	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
171	Ur	AH	Bazaar Alley		II		3	40.0133	
172	Ur	AH	Bazaar Alley		III		2	27.9897	
173	Ur	AH	Boundary St.		I/ III		12	262.0595	
174	Ur	AH	Broad St.		I		10	175.3466	
175	Ur	AH	Church Lane		XV		9	142.8508	
176	Ur	AH	Church Lane		XIII		14	270.8925	
177	Ur	AH	Church Lane		XI		8	109.0875	
178	Ur	AH	Church Lane		V		13	244.356	
179	Ur	AH	Church Lane		III		5	134.3927	
180	Ur	AH	Church Lane		IX		16	292.1599	
181	Ur	AH	Church Lane		VII		10	207.8397	
182	Ur	AH	Church Lane		I		7	108.6391	
183	Ur	AH	Niche Lane		II		2	44.5341	
184	Ur	AH	Niche Lane		III		5	67.2678	
185	Ur	AH	Niche Lane		V		3	90.016	
186	Ur	AH	Niche Lane		VII		1	22.108	
187	Ur	AH	Niche Lane		IX		1	13.2042	
188	Ur	AH	Niche Lane		IV		9	180.0562	
189	Ur	AH	Old St.		I		8	224.533	The door entering No III Straight Street is blocked.
190	Ur	AH	Paternoster Row		XI		21	474.5102	
191	Ur	AH	Paternoster Row		III		8	130.3262	
192	Ur	AH	Paternoster Row		VII		3	53.0365	
193	Ur	AH	Paternoster Row		V		4	54.6185	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
194	Ur	AH	Paternoster Row		X/ VIII		4	63.2457	
195	Ur	AH	Paternoster Row		VI		4	37.6921	
196	Ur	AH	Paternoster Row		IV		17	332.0225	IV a connected to IV via rooms 15 and 13; Wooley and Mallowan 1976; 147.
197	Ur	AH	Paternoster Row		XIII		4	80.705	
198	Ur	AH	Paternoster Row		Bazaar Chapel		2	28.0927	
199	Ur	AH	Paternoster Row		XIV		6	94.5817	
200	Ur	AH	Paternoster Row		I		3	45.1429	
201	Ur	AH	Paternoster Row		II		4	53.7092	
202	Ur	AH	Paternoster Row		XII		3	58.3092	
203	Ur	AH	Paternoster Row		IX		4	58.958	Door to No VI Store Street blocked; Wooley and Mallowan 1976: 150.
204	Ur	AH	Store St.		I		10	234.9843	
205	Ur	AH	Store St.		II		2	25.0843	
206	Ur	AH	Store St.		IV		3	35.0207	
207	Ur	AH	Store St.		VI		4	38.7615	Door to No IX Paternoster Row blocked; Wooley and Mallowan 1976: 150.
208	Ur	AH	Straight St.		IV		10	206.3918	
209	Ur	AH	Straight St.		III		16	288.5239	The door entering No I Old Street is blocked.
210	Ur	AH	Straight St.		V		5	86.6488	

Ref	City	Area	Street	Block	House number	Date (MD)	Rooms	Total Area (m2)	Comments
211	Ur	AH	Straight St.		VI		4	64.1659	
212	Ur	AH	Straight St.		VIII		5	58.9943	
213	Ur	AH	Straight St.		VII		5	73.4663	
214	Ur	AH	Straight St.		X/XII		12	148.4948	
215	Ur	AH	Straight St.		II		1	28.3166	
216	Ur	EM	Gay St.		1		2	27.9076	
217	Ur	EM	Gay St.		2		4	62.0983	
218	Ur	EM	Gay St.		3		9	157.6089	
219	Ur	EM	Gay St.		4		9	143.2151	Doorway between rooms 7 and 8 removed at time of house's extension into Gay Street; Woolley and Mallowan 1976: 99.
220	Ur	EM	Gay St.		5		4	62.3146	
221	Ur	EM	New St.		1		5	73.9137	
222	Ur	EM	New St.		2/3		8	108.2152	
223	Ur	EM	Quality Lane		1		3	63.9763	
224	Ur	EM	Quiet St.		1		9	118.3551	
225	Ur	EM	Quiet St.		3		4	111.3428	
226	Ur	EM	Quiet St.		5		7	120.4341	
227	Ur	EM	Quiet St.		7		9	151.0053	
228	Ur	EM	Quiet St.		2		11	180.5749	

Part 2: Building function

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
1			x		
2			x		
3			x		
4				x	
5				x	
6		x			
7		x			
8		x			
9			x		
10			x		
11		x			
12		x			
13		x			
14		x			
15		x			
16		x			
17		x			
18		x			
19		x			
20			x		
21		x			
22		x			
23		x			
24		x			
25			x		

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
26			x		
27		x			
28		x			
29			x		
30			x		
31			x		
32			x		
33			x		
34			x		
35			x		This structure is a stall according to Henrickson 1981.
36			x		
37			x		
38		x			
39		x			
40			x		
41		x			
42		x			
43		x			
44		x			
45		x			
46		x			
47	x				
48	x				
49	x				
50	x				
51	x				
52	x				

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
53		x			
54		x			'Small Temple'
55	x				
56			x		
57		x			
58				x	
59				x	
60			x		
61		x			
62		x			
63		x			
64		x			
65		x			
66		x			
67		x			
68			x		
69		x			
70		x			
71			x		
72				x	
73		x			
74			x		
75			x		
76		x			May be two suites in 33, 34, 35 and 38, 40...
77		x			
78			x		
79		x			

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
80			x		
81		x			
82		x			
83		x			
84		x			
85		x			
86		x			
87		x			
88		x			
89		x			
90	x				
91			x		
92		x			
93			x		
94			x		
95				x	
96			x		Symmetrical plan and high numbers of stairs and bathing platforms suggest this might not be 'other'
97			x		
98		x			
99		x			
100			x		
101		x			
102			x		
103		x			
104		x			Uncertain due to lack of doorways to west
105	x				
106	x				

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
107	x				
108	x				
109		x			
110	x				
111	x				
112	x				
113	x				
114		x			
115	x				
116		x			
117		x			
118		x			
119		x			
120		x			
121			x		
122		x			
123		x			
124		x			
125			x		
126		x			
127			x		
128			x		
129			x		
130			x		
131			x		
132		x			
133		x			

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
134			x		
135			x		
136			x		
137			x		Uncertain
138			x		Uncertain
139		x			
140		x			
141		x			Might be 2 suites of rooms around a courtyard
142			x		Uncertain
143				x	
144			x		
145			x		
146		x			
147		x			
148		x			
149		x			
150		x			
151				x	
152		x			
153		x			
154		x			
155		x			
156		x			
157		x			
158		x			
159		x			
160		x			

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
161		x			
162		x			
163		x			
164		x			
165			x		This house is identified as belonging to an extended family on textual evidence (Stone 1981).
166			x		
167	x				
168			x		
169		x			
170	x				
171	x				
172	x				
173		x			
174		x			
175			x		
176			x		
177				x	The 'Ram Chapel'.
178			x		
179		x			
180			x		
181		x			
182				x	
183	x				Interpreted by excavator as a stand-alone domestic chapel.
184		x			
185		x			
186	x				
187	x				

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
188		x			
189			x		
190			x		
191		x			
192	x				
193	x				
194		x			
195		x			
196		x			
197		x			
198				x	
199		x			
200				x	
201		x			
202	x				
203	x				
204		x			
205	x				
206	x				
207		x			
208			x		
209			x		
210		x			
211		x			
212		x			
213		x			
214			x		

Ref	Shop/ Stall?	Nuclear	Extended	Other	Comments
215	x		x		
216	x				
217		x			
218		x			
219			x		
220		x			
221		x			
222			x		
223	x				
224		x			
225		x			
226			x		
227		x			
228			x		

Part 3: RRA values and control ratios

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur-Chapel RRA	2nd Ur Chapel RRA	Comments
2	7	5	2.551				0.425		58.33				Unclear connection to the street
6	4	2.4	1.989				0.284		37.50				
7	3	2	1						75.00				
8	2	1.666	0.666				0		14.36				Entrance is into room 1; Henrickson 1981.
9	4	2.7	1.235				0.508		19.42				
10	5	3	1.356				0.555		20.00				
11	4	2.5	1				0.333		50.00				
12	3	2.25	0.833				0.167		n/a				
13	2	1.5	1						n/a				
14	2	1.666	0.666						n/a				
15	2	1.333	0.333						50.00				
16	3	2.25	0.833				0.167		26.60				
17	3	2	0.667						55.00				
18	4	3.1	1.656				0.438		12.09				
19	4	2.4	1.989				0.852		n/a				
20	6	3.7	1.961				0.726		75.00				
21	4	2.5	1						33.33				
22	3	2	1						23.79				
23	2	1.666	0.666						12.89				
24	4	2.6	2.273				0.568		n/a				

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur Chapel RRA	2nd Ur Chapel RRA	Comments
25	5	3.2	1.329				0.418		n/a				
26	4	2.875	1.633				0.544		21.43				
27	3	2.4	1.989				0.284		25.73				
28	5	2.833	2.101						25.62				
29	4	2.833	2.101				0.573		27.78				
30	4	3.1	1.525				0.363		18.30				
31	7	4	1.914				0.585		50.00				
32	5	3.5	2.178				0.544		3.00				
33	5	3.6	2.05				0.526		10.76	27.41			
35	3	2.25	0.833				0.167		80.00				
36	3	1.888	0.7				1.577		50.00				
37	7	4.25	1.726				1.594	1.793	8.25				
39	2	1.75	0.5				0	0.45	38.83				
40	3	2.143	1.121				0.28		58.33				
41	5	3.286	2.241				0.84		n/a				
42	3	2.2	1.705				0.568		50.00				There is a door between rooms 1 and 4 according to Henrickson 1981.
43	3	2	1.42				0.284		31.44				
44	2	1.666	0.666						n/a				
45	4	2	0.667				0.167		n/a				
46	5	2.875	1.633				0.544		32.00				
53	3	2.166	1.336						19.42				
55	4	2.75	1.116						26.14				

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur Chapel RRA	2nd Ur Chapel RRA	Comments
57	3	2	1						38.89				
60	4	2.714	1.68				0.871		38.89				
62	4	2.714	1.493				0.327		28.57				
63	5	3.8	3.209				0.764		44.44				Entry point based on scarcity of entrances directly into courtyards in other houses at MD.
70	5	3.167	2.484				0.109		n/a				
71	4	2.555	1.226						n/a				Structure in room 2 is a storage bin. Rooms 5 and 3 are connected; Mackay 1938: 113.
75	6	3.818	1.911	1.664			0.555		10.42				
76	6	3.417	1.542						n/a				Connection between 3 and 5 assumed.
78	11	6.047	2.291	1.255	1.71		1.364	2.291	n/a				Connection between 15 and 16 assumed.
79	4	2.555	1.226						n/a				No door from room 5 to outside mentioned; Mackay 1938: 75-77.
81	5	3	2.841						25.00	5.00			
84	6	3.444	1.927				2.454	0.701	27.27				
85	5	2.455	0.986				0.678		27.78				Connection between 6 and 7 assumed on basis of other houses.
88	5	3.5	2.178	1.089		1.089	0.544		25.62				
91	7	4.053	1.468	1.215		1.114	0.405		22.50				Depth calculations ignore conjectural back entrance on Pl.IV, Marshall 1931

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur Chapel RRA	2nd Ur Chapel RRA	Comments
92	5	2.8	1.307				1.235		14.00	14.89			
94	5	3.571	1.481	1.351		1.406	1.213	0.634	25.00				Connection between 12 and 13 assumed. Openings on outside walls of room 7 are not doors; Marshall 1931: 180.
96	4	3.368	1.139	1.089		0.506	0.076		16.60				Position of 8 in relation to 7 and 9 unclear. Relationships of 11 and 12 to 2 also assumed.
97	4	2.3	1.025				0.701		20.00				
103	5	3.25	1.89				0.7		36.60				
114	2	1.5	0.333				0.167		37.50				
116	3	1.5	1				0.333		42.86				
117	4	2.6	1.834				0.382		21.50				
118	4	3.273	1.541				0.678		40.00				
119	2	1.5	0.333				0		28.13				
120	4	2.833	2.101			1.146	0.573						Connection between 5 and 6 assumed.
121	4	3	1.577				0.351		28.30				
123	3	2	0.667				0.833		10.00				
126	5	2.889	1.439	1.047			0.653		42.56				Room 4 is most likely a filled area under the stairs.
127	5	2.333	0.85	0.836	0.883	0.65	1.301		16.64				
130	5	3.28	1.275	0.782			0.617		23.00				Connection between 11 and 12 assumed.
131	6	2.875	1.14				1.399						

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur Chapel RRA	2nd Ur Chapel RRA	Comments
133	3	2.16	1.33	1.261		0.42	0.7		16.67	13.33			
134	4	2.3	0.785			1.194	0.7		26.67				
135	7	3.69	1.044	1.014		2.245	1.365	1.098					
136	5	2.818	1.19			0.616							Connection between rooms 9 and 10 assumed.
137	5	3.18	1.478			0.863	1.726		19.42				
139	4	2.25	1.089										
145	5	3.636	1.787	1.048			0.678						
146	3	2.25	0.833						50.00				
147	4	2.6	2.273			2.273	0.568		33.33				
161	3	2.25	0.833				0.5		40.00				Incomplete plan; house may be deeper.
162	4	2.167	1.338				0.573		21.43				
163	3	2	1						37.50				
164	4	2.8	2.557				0.568		33.33				House reconstructed on basis of houses E and F.
165	9	5.444	3.227				1.307		18.18				For justification of division of rooms 2 and 3, see Stone 1981.
166	4	2.714	1.68				0.28		50.00				Route into 7 unclear.
168	4	3	1.276				0.319		19.23				Connection between 11 and 12 assumed.
169	4	2.44	1.136				0.088		25.00				
173	5	2.9	1.212	0.904			0.319		33.31		1.914		
174	4	2.4	1.017	1.452			0.871		16.64		0.654		

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur Chapel RRA	2nd Ur Chapel RRA	Comments
175	5	2.44	1.136				0.701		7.50		1.052		
176	8	4.1	1.786				0.823	1.276	22.20	5.53	1.729		
178	5	3.308	1.395	0.929			0.325		30.93		1.579		
179	4	2.6	2.273				0.568		33.33				
181	5	3	1.452				0.436		33.27		1.307		
184	4	2.2	1.705				0.852		37.50				
185	3	2	1				0.333		41.67		1		
188	3	2.222	0.964	0			0.263				0		
189	4	2.5	1.089	1.089			0.327		40.30		1.633		The door entering No III Straight Street is blocked.
190	5	3.04	0.927						38.89				
191	5	3	1.742	1.198			0.436		44.44		1.307		
194	3	1.75	0.5						40.00		0.667		
195	3	2.25	0.833				0.167		50.00				
196	5	3.235	1.143				0.452		26.67		0.693	0.904	Rooms 15 and 16 connected; Wooley and Mallowan 1976; 147.
199	2	1.3	0.344				0.191		44.00		0.382		
204	5	3.4	1.743	1.162	1.525		0.508		34.82		1.525		
207	3	2	0.667						26.60				Door to No IX Paternoster Row blocked; Wooley and Mallowan 1976: 150.
208	5	3.1	1.525	2.76			0.436		22.73		1.525		

Ref	Max Depth	Mean Depth	House RRA	Bathing Area/ Toilet RRA	2nd Bathing Area/ Toilet RRA	Well Room RRA	Courtyard RRA	2nd Courtyard RRA	Courtyard Control Ratio	2nd Courtyard Control Ratio	Ur Chapel RRA	2nd Ur Chapel RRA	Comments
209	6	3.73	1.506	1.56			0.498		28.41		1.527		The door entering No 1 Old Street is blocked.
211	4	1.75	0.5				0.333		20.00				
212	4	2.6	2.273						33.33				
213	4	2.66	2.358				0.852		50.00				
214	6	4.08	1.965	1.914			1.276		15.38	15.38	1.223		
217	4	2.5	1										
218	4	2.7	1.341	0.876			0.175		56.40		0.876		
219	5	3.1	1.735				0.438		25.00				Doorway between rooms 7 and 8 removed at time of house's extension into Gay Street; Woolley and Mallowan 1976: 99.
220	3	2	0.667				0.167		50.00				
221	5	2.7	2.415				0.568		33.33		2.273		
222	4	2.375	1.198	1.307			0.544		27.78		1.851		
224	5	3.44	1.924				0.175		25.00				Door between 2 and 5 blocked; Woolley and Mallowan 1976: 104.
225	2	1.5	0.333				0.5		5.00				
226	4	2.375	1.198				0.109		33.33				
227	0.555	0.222	1.751				0.7		13.30				In its later phase, the house's entrance is into room 9, which also opens onto room 2; Woolley and Mallowan 1976: 111.
228	5	3.18	1.478				0.37	0.493	39.58	22.17	1.664		

Part 4: Control Values

Ref	Space																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
2			1.00	0.70	3.33	0.20	0.20	0.33	2.20	0.33	1.20	0.50															
6	1.25	3.50	0.25	0.25	0.25																						
7	1.50	1.50	0.50																								
8	3.00	0.33	0.33																								
9	2.08	1.58	1.00	1.33	0.50	1.25	0.50	0.75	1.00	0.75																	
10	1.70	0.66	0.50	1.33	1.50	0.53	2.33	0.20	1.20	0.50	0.20																
11	1.50	1.00	1.50	0.50																							
12	1.33	2.50	0.33	0.33																							
13	2.00	0.50																									
14	3.00	0.50	0.50																								
15	1.00	1.00	1.00																								
16	1.33	2.50	0.33	0.33																							
17	2.50	1.33	0.33	0.50																							
18	2.50	0.49	5.50	0.33	0.16	0.16	0.16	0.16	0.16																		
20	1.33	1.83	1.33	0.50	1.50	0.83	0.50	1.33	0.50	1.33																	
21	1.50	1.00	1.50	0.50																							
23	3.00	0.33	0.33																								
24	1.33	2.00	0.33	1.33	0.50																						
25	1.50	1.50	0.83	1.64	0.33	0.64	3.33	0.14	0.44	1.64	0.33	1.28	0.33														
26	2.33	0.33	1.16	1.33	0.50	0.33	1.33	0.33																			
27	3.50	0.25	0.25	1.25	0.50																						
28	2.50	0.83	0.50	1.50	1.00	0.33																					
29	1.33	1.50	1.33	0.50	1.33	0.50																					

Ref	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
30	1.20	2.83	0.20	1.20	0.50	1.20	0.50	0.33	1.20	0.33																	
31	1.33	1.50	0.33	3.33	0.20	0.20	1.20	0.50	0.70	1.00	1.50	0.50															
32	1.50	0.75	2.50	0.25	1.25	1.25	0.50	0.50																			
33	1.50	0.75	1.83	1.25	0.50	0.75	0.50	1.25	0.33																		
35	1.33	2.50	0.33	0.33																							
36	1.33	0.50	0.50	1.33	1.16	1.66	1.66	0.33	0.30																		
37	1.83	0.83	1.33	1.30	1.33	0.50	1.33	0.50	0.66	4.66	0.16	0.16	0.16	0.16	1.16	0.50											
39	4.00	0.25	0.25	0.25																							
40	4.00	1.20	0.50	0.20	1.20	0.50	0.20																				
41	1.33	2.50	0.33	0.66	2.50	0.33	0.33																				
42	2.33	0.33	0.33	2.33	0.33																						
43	3.50	0.25	0.25	1.25	0.50																						
44	3.00	0.33	0.33																								
45	2.50	0.33	1.33	0.50																							
46	2.25	2.83	0.25	0.25	0.50	1.50	0.75	0.33																			
53	2.58	0.25	0.25	2.25	0.33	0.33																					
54	1.50	1.50	0.50																								
56	1.67	0.33	0.50	0.17	4.16	0.17	0.17	1.17	0.50	2.17	0.33	0.33															
57	2.00	0.50																									
60	2.16	0.50	3.50	0.25	1.50	0.33	0.25	0.25																			
62	1.25	3.50	0.25	0.50	1.25	0.25	1.25	0.50																			
63	1.50	0.83	2.00	1.33	0.50	0.33																					
67	1.20	4.00	0.20	0.20	0.20	0.50	1.20																				
70	1.50	0.83	0.50	1.33	2.00	0.33																					
71	4.00	0.25	0.50	0.75	1.50	0.75	0.25		1.50																		
75	1.33	1.33	0.25	0.25	1.25	0.25	1.25	0.33	1.58	0.75	0.50																
76	1.58	0.58	2.58	0.25	0.25	0.33	0.33	2.33	1.33	0.33	0.66	0.83															
78	2.50	0.33	0.66	2.00	0.58	1.66	0.58	1.25	0.33	0.33	1.58	0.33	1.33	0.83	1.50	0.50	0.33	2.50	0.83	0.83	0.33						

Ref	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
79	1.33	1.58	0.33	0.50	2.83	0.25	0.25																				
81	1.50	1.00	1.00	1.50	0.50																						
84	1.25	0.25	2.50	1.25	0.75	1.00	1.50	0.50	0.50																		
85	1.66	0.33	1.00	0.50	1.50	0.58	2.00	0.75	1.58	0.33	0.25																
88	1.50	0.83	0.50	1.33	2.50	1.33	0.50	0.33																			
91	2.33	0.33	1.46	0.33	4.50	0.33	1.13	0.33	0.13	0.46	1.63	0.33	0.63	1.00	1.50	0.50	0.13	1.13	0.50								
92	1.83	1.83	1.33	0.50	0.83	0.83	3.00	0.33	0.33																		
94	1.20	0.33	1.53	2.83	0.25	2.66	0.20	0.70	1.50	0.50	1.70	1.33	0.50	0.33	1.08	0.83	0.75	0.25									
96	1.13	3.32	0.33	2.13	1.13	0.50	?	0.50	?	0.33	2.13	2.13	0.33	1.13	0.50	0.33	0.33	0.33	0.33								
97	1.50	0.58	0.25	1.25	0.50	0.75	0.50	1.33	2.00																		
103	2.00	2.33	0.50	0.83	0.50	0.50	1.50																				
114	1.83	0.33	1.83	0.33																							
116	1.50	1.50	0.50																								
117	1.25	3.00	0.25	1.25	0.50	0.25																					
118	1.25	1.41		2.58	0.25	0.25	0.33	1.50	2.25	0.33	0.33																
119	0.83	2.00	0.33																								
120	1.33	1.83	0.33	0.33	2.33	0.33																					
121	2.25	0.20	0.33	2.83	0.33	0.20	0.50	1.20	1.20																		
123	1.33	0.50	2.50	0.33																							
126	0.20	3.83	2.20	0.20	0.20	0.70	1.50	0.50	0.33																		
127	0.33	2.33	0.33	0.50	0.53	1.16	1.53	1.50	0.50	2.83	1.20	0.33	0.50														
130	0.25	3.20	0.25	0.25	0.20	3.45	0.20	0.50	1.20	0.40	1.50	0.20	0.20	0.20													
131	0.25	2.50	1.50	0.50	0.25	0.25	0.50	1.00	0.75		2.25	2.08	1.75	0.25	0.33	0.25											
133	0.33	2.25	2.83	1.25	0.50	0.25	0.33																				
134	0.33	1.66	1.00	1.66	0.33	0.50	1.20	0.53	0.83	0.53	0.53	4.00	0.20	0.20													
135	2.33	1.58	1.16	0.58	2.05	0.33	0.50	1.33	0.58	0.83	2.58	0.58	0.58	1.33	0.50	0.33	0.50	0.25	0.33	1.75	0.50	1.25	0.50	0.25	1.33	0.25	0.25
136	2.25	1.25	0.50	0.25	2.75	0.75	1.50	0.50	1.25	0.50																	
137	3.00	0.75	1.50	0.50	0.25	0.58	0.33	2.33	1.83	0.33	0.33																

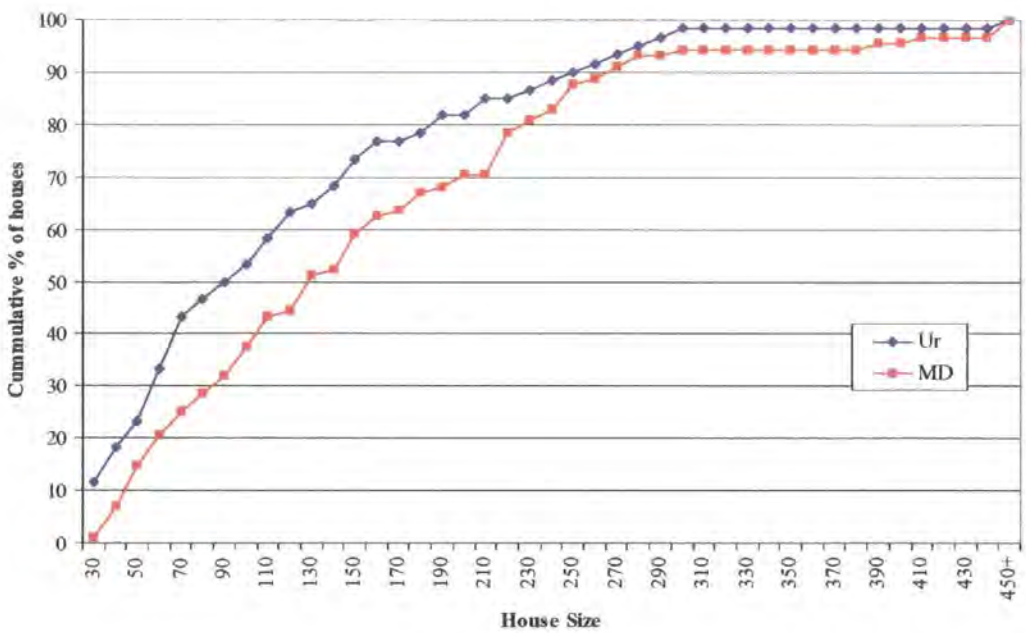
Ref	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
140	1.50	0.83	1.16	0.83	1.33	0.66	0.66	1.50																			
145	1.25	2.33	0.25	0.75	1.50	0.50	0.83	1.50	0.50	0.33	1.75																
146	1.33	2.50	0.33	0.33																							
147	1.33	2.00	0.33	1.33	0.50																						
161	1.30	2.00	0.33	1.33																							
162	1.33	1.50	1.33	0.50	1.33	0.50																					
163	1.50	1.50	0.50																								
164	1.33	2.00	0.33	1.33	0.50																						
165	1.50	0.83	2.00	0.83	1.00	1.00	1.00	1.00	0.50	0.33																	
166	1.20	4.00	?	0.20	0.20	?	?																				
168	1.33	1.53	1.33	0.33	1.70	0.66	1.70	0.83	0.33	0.66	0.66	1.33	0.50	1.70	1.36												
169	2.50	1.75	1.00	0.25	0.66	0.33	1.25																				
173	0.64	4.33	6.40	0.14	1.14	0.50	0.14	0.14	1.64	0.33	1.33	0.50															
174	0.83	1.83	0.33	1.55	0.33	1.33	1.03	0.83	0.58	0.58																	
175	1.83	0.75	0.83	0.75	1.83	1.25	0.75	1.00	0.50																		
176	1.25	3.33	0.25	0.58	1.50	0.33	0.25	2.25	0.33	0.33	0.83	1.00	1.50	0.50													
178	1.20	4.33	0.20	0.20	0.20	0.33	1.70	0.70	1.50	0.50	1.33	0.50															
179	1.33	2.00	0.33	1.33	0.50																						
181	2.25	3.66	0.25	0.25	1.75	0.33	1.33	0.50	0.25	0.33																	
182	0.83	3.00	0.33	0.33	0.83	1.00	1.00																				
184	1.50	0.83	2.50	0.33	0.33																						
185	1.50	1.50	0.50																								
188	4.03	0.20	0.20	1.20	0.20	0.33	2.30	0.33																			
189	1.00	0.70	3.50	0.20	0.20	1.20	0.50	0.70																			
191	1.25	4.00	0.25	0.25	0.75	1.50	0.50	0.25																			
194	0.83	0.83	2.00	0.33																							
195	2.50	0.33	0.33	1.33																							
196	1.66	4.80	0.16	0.41	2.75	0.25	0.25	0.30	1.75	0.49	0.16	0.16	0.41	0.58	2.50	0.25	0.25										

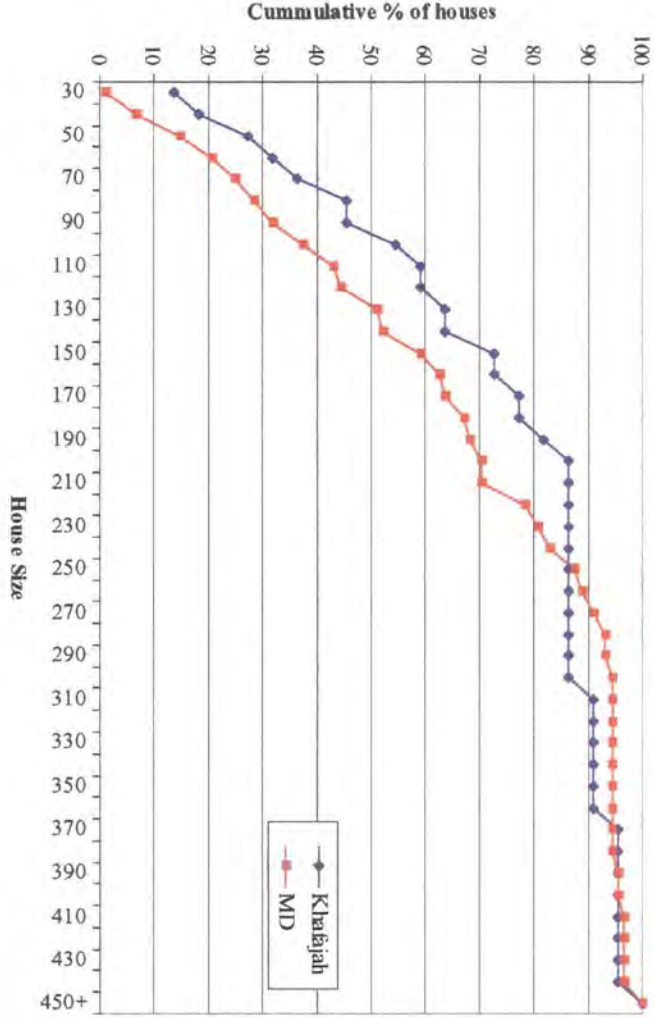
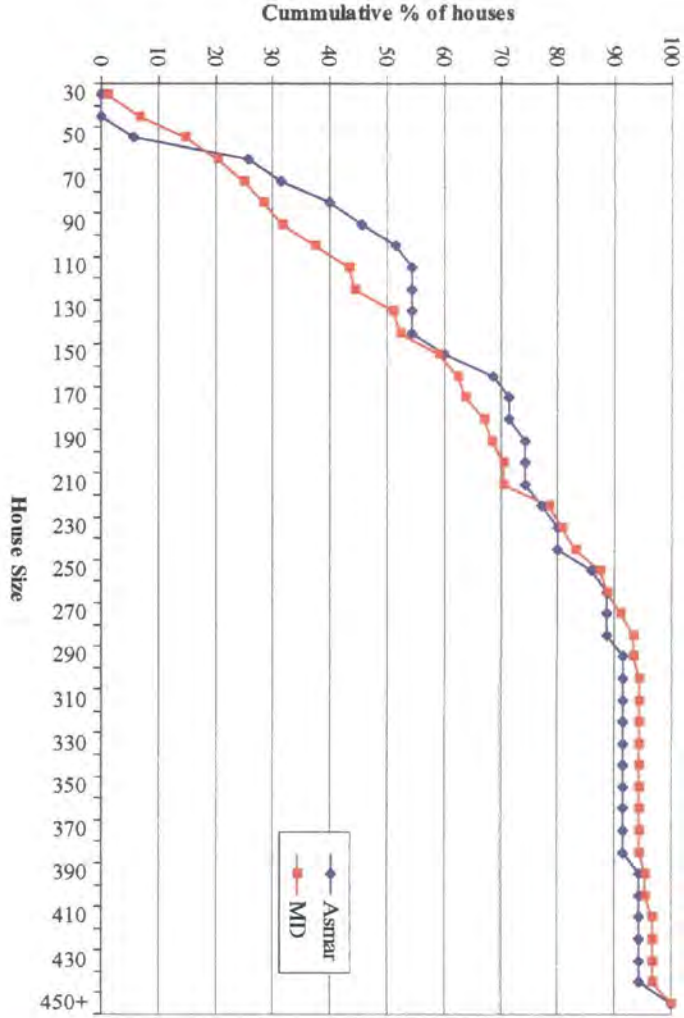
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199	0.45	3.08	0.45	1.28	0.45																						
204	2.50	0.58	3.83	0.25	0.33	0.25	0.33	2.25	0.33	0.25																	
207	2.50	1.33	0.33	0.50																							
208	1.70	2.50	0.20	1.53	0.33	0.33	1.66	0.53	0.33	0.53																	
209	1.14	4.83	0.14	0.14	0.33	1.63	0.83	0.47	0.64	1.50	0.50	0.83	1.00	1.33	0.50	0.14											
211	1.50	1.00	1.50	0.50																							
212	1.33	0.33	2.00	1.33	0.50																						
213	1.25	3.00	0.25	0.50	1.25	0.25																					
214	0.66	2.00	0.33	0.58	1.83	0.50	0.66	2.00	0.33	0.66	1.75	0.33	2.00														
218	1.14	5.64	0.14	0.14	0.14	0.14	0.14	0.50	1.14																		
219	1.25	2.50	0.25	1.25	0.50	0.25	0.75		1.50	0.50																	
220	2.50	0.33	1.33	0.50																							
221	1.30	2.00	0.33	1.33	0.50																						
222	0.83	2.50	0.33	0.83	1.33	0.50	1.00	1.00																			
224	0.75	2.50	0.25	0.75	0.50	1.50	0.75																				
225	1.00	2.33	0.58	0.25																							
226	1.25	3.00	0.25	0.75	0.75	1.25	0.50																				
227	1.33	1.33	0.33	0.66	2.50	0.33	0.33	0.33	2.33																		
228	1.17	4.75	0.17	0.33	0.17	0.17	2.67	0.25	1.25	0.25	0.50																

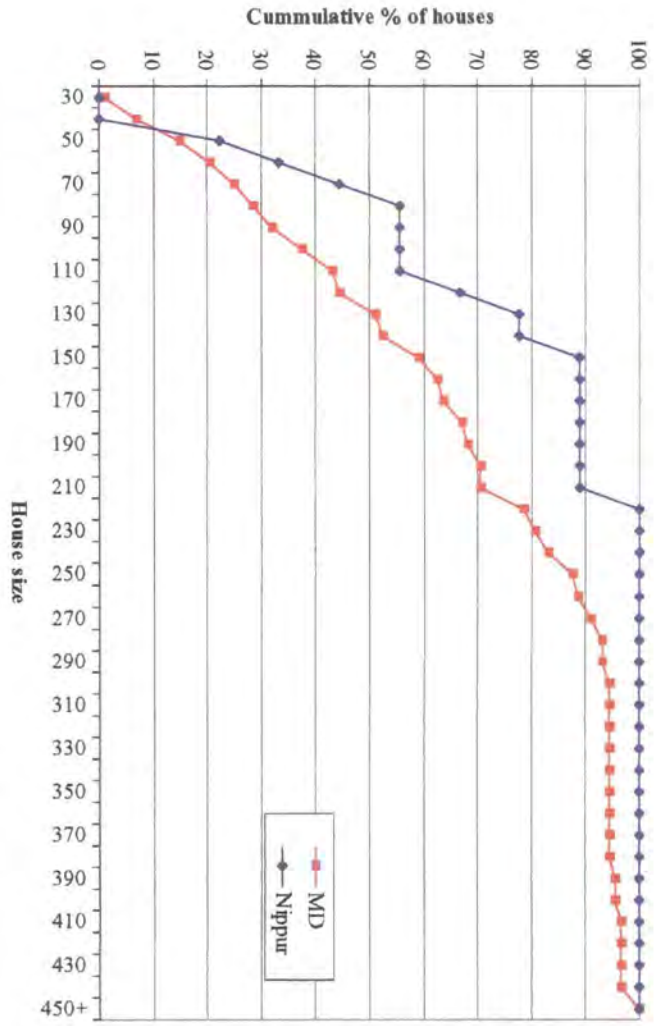
**Appendix B:Kolmogorov-Smirnov Tests On House Size
Distributions**

The Kolmogorov-Smirnov two-sample test is used to test whether two samples may have derived from the same population. When comparing the overall distribution of house sizes at Mohenjo Daro with that at Mesopotamian sites, the Null Hypothesis (that they could have been drawn from the same population) has to be accepted even at a 5% level of probability. Statistically, there is no evidence that the distribution of house sizes from MD and the various Mesopotamian sites were from different populations.

	Test Statistic	Value at 5% probability	Conclusion
Ur	968	1200.46	from same population, even at 5% level
Asmar	429	835.8487	from same population, even at 5% level
Khafajah	330	626.6843	from same population, even at 5% level
Nippur	236	376.3988	from same population, even at 5% level







Appendix C: Metalwork Examined In The Lothal Site Museum And Archive.

Objects examined in the museum and archives¹:

accession number	field register description	comment	category
1711	portion of a copper blade, upper portion broken	only a couple of mm thick	tw
1728	small size copper blade, intact		t
1731	finger copper ring, intact but corroded		p
1732	copper finger ring	ring and ornament broken of it	p
1735	broken copper finger ring	spiral ring	p
1916	copper fishhook, upper portion slightly decayed, tanged mouth		t
1917	triangular shaped copper objects, lower portion like nail cutter whilst top is pointed	flat, thin	?
1918	copper chisel	sharp both edges	t
1919	copper rod, upper portion circular bend	top of fishhook (eye to right)	t
1920	rectangular copper object with flat base in both end	weight? Appears to have been filed	m
1921	copper rod	circular, tapers	t
1922	piece of copper corrugated bangle	as complete bobbled one yesterday	p
1923	copper rod broken		rod
1924	small copper ball		p
1925	truncated shaped object, top slightly broken	2/3mm thick. Flat	?
1926	copper fragile rod		rod
1927	two pieces of small copper rod, broken		rod
1928	copper arrowhead		tw
1929	point portion of a copper object, broken		t

¹ Accession numbers prefixed by 'm' refer to objects on display, and do not correlate to the objects' original accession numbers.

accession number	field register description	comment	category
1930	rectangular broken copper object		?
1931	short barrel shaped copper bead	rod thing	p
1932	triangular shaped unidentifiable object (copper)		?
1933	lower portion of a copper chisel, broken in 3 places		?
1934	3 pieces of copper bangle fragment		p
1935	small circular flat copper bead with flat base		p
1936	copper chisel type object upper portion circular handle with lower having flat squared section to right of lower piece, becoming rounded to left of upper piece		t
1937	broken copper knife, lower portion	2/3mm thick	?
1938	fish-hook copper. head broken		t
1939	broken pointed copper rod		t
1940	copper finger ring, broken		p
1941	half portion of a copper finger ring		?
1942	broken piece of a copper object		?
1943	copper rectangular bead	bead	p
1944	broken copper arrowhead	arrowhead	tw
1945	part of a copper rod in four? Pieces		rod
1946	broken fish-hook	fish-hook?	t
1947	broken copper rod in 3 pieces	square section	r
1948	rectangular copper rod, broken into 4 small pieces	rectangular section	r
1949	broken slightly edged copper object. Mouth position of object		?
1950	copper rod in 2 pieces	original object appear much thinner but of same shape	t

accession number	field register description	comment	category
1951	2 pieces of copper knife	very thin, c.2mm	tw
1952	rectangular copper bead	rectangular section	p
1953	broken pieces of copper chisel	square section to left, tapering to square section to right	t
1954	copper sling ball	spherical, no apparent hole.	?
1955	rectangular copper object	c.4mm thick. Flat.	?
1956	copper crucible		?
1957	rectangular hollow copper objects, broken into 2 parts	apparently hollow, square sectioned	?
1958	circular copper bead	bead, flat	p
1959	flat copper piece (blade)	c.2mm thick	tw
1960	piece of copper rod (pin))	squareish section	rod
1961	flat shape copper rod	hollow square section	t
1962	rectangular copper bead?	squareish section	?
1963	half finger copper ring		t
1964	broken copper bangle piece	one tubular, other flattish crud	p
1965	broken copper bangle pieces into four pieces	flat bangle bits	p
1966	copper finger ring knob, ring part broken	bead with crap attached, can see perforation	p
1967	triangular copper object, top is broken	strange pyramid-shaped thing	?
1968	cylindrical copper bead	bead	p
1969	copper wire	flattish sides. Hammered?	p
1970	rectangular copper rod	flat, rect section 3mm thick	rod
1971	copper channel type object	bent so as to appear like a fragment of a hollow tube	?
1972	neck portion of a copper pot		v
2749	copper intact bangle		p
2769	copper small dog with head tilted towards right direction.	dog figurine	a
2988	copper broken ring	ring with head again	p
2998	copper drill	squareish section	rod
4401	copper bangle, broken		p
4402	copper bangle, broken		p
4403	copper bangle, broken		p
4404	copper bangle, broken		p

accession number	field register description	comment	category
4405	copper bangle, broken		p
4406	copper bangle, broken		p
4407	copper bangle, broken		p
4408	copper bangle, broken		p
4409	copper bangle, broken		p
4410	copper bangle		p
4411	copper bangle, broken		p
4412	copper bangle, broken		p
4413	copper bangle, broken		p
4414	copper bangle, broken		p
4415	copper bangle, broken		p
4416	copper bangle piece		p
4417	copper bangle piece		p
4418	copper nail? Square section tapering downwards	square section: punch	t
4419	copper pin, point broken		t
4420	copper object, broken		?
4421	copper nail, broken		r
4422	copper pin, broken		rod
4423	copper nail/ object		rod
4424	copper pin, broken?		rod
4425	copper pin, broken?		p
4426	coiled copper ring		p
4427	coiled copper ring broken		p
4428	coiled copper ring broken		p
4429	copper bangle? Reduced to thin wire because of corrosion (broken)		p
4430	copper bangle, broken		p
4431	copper ring, broken		p
4432	copper bangle piece		p
4433	copper pin or engraver		rod
4434	copper point		t
4435	copper pin broken		t
4436	copper pin broken		rod
4437	copper bangle piece		p
4438	copper bangle piece	circular section	p
4439	copper bracelet piece	hollow	p
4440	copper bangle broken		p
4441	copper pin broken		rod

accession number	field register description	comment	category
4442	copper pin broken		rod
4443	copper bangle piece		p
4444	copper pin broken		rod
4445	copper object with squareish section	square section at one end. Tool?	t
4446	copper pin, point broken		rod
4447	copper bangle, broken		p
4448	copper fish hook, broken		?
4449	copper fish hook broken		rod
4450	copper fish hook, broken		?
4451	copper slag		man
4452, 4453, 4456	pieces of a copper sickle	thin, flat section	tw
4454	copper object?		?
4455	fragmentary copper object		?
4457	a copper piece		?
4458	a copper piece		?
4459	piece of a copper sickle		?
4460	a fragmentary copper piece		?
4461	copper bangle in four pieces		p
4462	copper bracelet	hollow	p
4463	piece of a copper ring		p
4464	piece of a corrugated copper ring	bangle frag	p
4465	piece of a copper ring		p
4466	copper ring piece	2 bangle bits	p
4467	copper ring piece		p
4468	copper ring having 2 coils, broken	2 bangle frags	p
4469	copper bead	bead	p
4470	copper bead	bead	p
4471	copper bead		p
4472	copper object; may be piece of an ornament		?
4473	indeterminate copper object with hollow inside		?
4475	piece of a copper object		rod
4476	a copper point	hollow pointy cone	?
4477	piece of indeterminate		tw

accession number	field register description	comment	category
	copper object		
4478	a copper point or drill bit		t
4479	a fragmentary copper object		?
4480	piece of an indeterminate copper object		?
4481	tiny piece of a copper bangle		p
4482	piece of a copper thin rod		p
4483	copper wire with square section	2 bits (broken)	?
4484	piece of indeterminate copper object	squashed tube?	p
4485	piece of copper object with oval outline at one end		?
4486	fragment of a copper rod		rod
4487	a copper point piece	hollow pointed cone	?
4488	copper point piece, broken		rod
4489	piece of a copper rod		rod
4490	a copper point, broken		rod
4491	a copper wire coil joined together, may be a conglomeration of bangles		p
4492	copper wire in hook shape		rod
4493	two copper wire pieces joined together		rod
4494	piece of a copper nail/point	square section at one end	rod
4495	piece of a broken indeterminate copper object		?
4496	piece of a copper pin, broken		rod
4497	piece of an indeterminate copper object		rod
4498	copper bangle piece		rod
4499	piece of a fish hook		rod
4500	indeterminate copper object		?
5043	terracotta object.	clearly made of copper!	rod
564	copper bangle		p
567	copper bangle		p

accession number	field register description	comment	category
568	copper bangle	flat inside?	p
569	part of copper bangle	hollow probably	p
571	copper bangle		p
573	copper bangle		p
577	copper tapering (?) nail	square one end, circular other (but corroded)	m
580	copper nail	square section at butt, chisel-like at other end	t
581	copper semi...(illegible) ...tube	hollow bangle portion?	?
584	copper nail		r
592	copper nail	circular section	t
597	copper arrowhead		tw
600	copper short like object	scoop-like bit at one end	t
601	copper nail	square section at top	m
923	copper bead		p
930	copper bead	as 942, more barrel-shaped	p
931	copper bead		p
932	copper bead		p
933	copper bead		p
934	copper bead		p
935	copper bead		p
937	part of copper ring	round section	p
938	part of copper ring, broken into 2 pieces	round section	p
939	copper bead		p
940	copper bead	2 objects; probably unrelated. One sub-spherical, other is tubular	?
941	copper tubular bead	hollow tube	p
942	copper bead	almost spherical, no apparent perforation	p
m1	on display	mirror	toi
m10	on display	axe blade	tw
m11	on display	blade	tw
m12	on display	blade	tw
m13	on display	axe	tw
m14	on display	axe	tw
m15	on display	bangle	tw
m16	on display	bangle	p
m17	on display	bangle	p

accession number	field register description	comment	category
m19	on display	bangle	p
m2	on display	mirror	toi
m20	on display	bangle	p
m21	on display	bangle	p
m22	on display	arrowhead	tw
m23	on display	arrowhead	tw
m24	on display	arrowhead	tw
m25	on display	blade	tw
m26	on display	blade	tw
m27	on display	blade	tw
m28	on display	blade	tw
m29	on display	rod tool	t
m3	on display	crucible?	n/a
m30	on display	ornament? Serrated saw in report	?
m31	on display	slightly domed disc ornament	p
m32	on display	flatish rod	p
m33	on display	bead, ornament	p
m34	on display	ovoid bead	p
m35	on display	unclear squareish thing	p
m36	on display	spherical ?bead	p
m37	on display	bead	p
m38	on display	?bead	p
m39	on display	bead	p
m4	on display	fishhook	t
m40	on display	bead	p
m41	on display	blade tang?	tw
m42	on display	blade	tw
m43	on display	blade	tw
m44	on display	blade	tw
m45	on display	blade	tw
m46	on display	needle/awl	t
m47	on display	needle/awl	t
m48	on display	needle/awl	t
m49	on display	needle/awl	t
m5	on display	eye of fishhook	t
m50	on display	chisel	t
m51	on display	?chisel	t
m52	on display	rod tool	t

accession number	field register description	comment	category
m53	on display	punch	t
m54	on display	punch/chisel	t
m55	on display	punch/ chisel	t
m56	on display	punch/ chisel	t
m57	on display	bangle	p
m58	on display	arrowhead	tw
m59	on display	chisel/punch/slim axe.	tw
m6	on display	figurine	a
m60	on display	chisel/punch/slim axe.	tw
m61	on display	chisel/punch/slim axe.	tw
m62	on display	chisel/punch/slim axe.	tw
m63	on display	chisel/punch/slim axe.	tw
m64	on display	chisel/punch/?.	t
m65	on display	chisel/punch/?.	t
m66	on display	chisel/punch/?.	t
m7	on display	bull figurine	a
m8	on display	blade	tw
m9	on display	blade	tw
n/a	on display	fragments in cotton wool	?
m67	on display	ingot or casting	man
m68	on display	ingot or casting	man
m69	on display	ingot or casting	man
m70	on display	ingot or casting	man
m71	on display	ingot or casting	man
m72	on display	four little blobs together. Star-shaped pendant or somilar in report	?
m73	on display	'anthropomorphic' axe	tw

Published objects unidentified in the site museum or collections:

accession number	field register description	comment	category	source reference
	not at museum	hare figurine; may be 'm6'	a	MA SI 78, vol.II:549-552
	not at museum	dog figurine	a	MA SI 78, vol.II:549-552
	not at museum	bird figurine	a	MA SI 78, vol.II:549-552
	not at museum	cockerel figurine; may be 'm6'	a	MA SI 78, vol.II:549-552
4190	not at museum	chain	m	MA SI 78, vol.II:552-553
	not at museum	chain	m	MA SI 78, vol.II:552-553
15030	not at museum	mirror	toi	MA SI 78, vol.II:552-553
14535	not at museum	bun ingot	man	MA SI 78, vol.II:552-553
	not at museum	sheet	man	MA SI 78, vol.II:552, plate CCXLIX a
	not at museum	revetted jar	v	MA SI 78, vol.II:552, plate CCXLVIII b

Appendix D: Assessing The Reliability Of Published Indus Metalwork Data.

The policy of distributing artefacts from Harappa and Mohenjo Daro over various museums and countries after Partition, means that the task of compiling an accurate and complete database of the metal objects found at these sites would involve a major research effort. This creates a reliance on the published data, which is the source of some reliability issues. There is no regularity in the manner of publishing metalwork by Mackay, Marshall or Vats. Items may appear in the 'copper and bronze utensils' chapters, may be referred to in the description of excavated areas, might perhaps appear in chapters devoted to other topics such as 'personal adornment' or 'toys and games', or appear in more than one chapter. More significantly, it is clear that many artefacts are not published at all: for example Marshall states that 'fish-hooks are common at Mohenjo Daro' (1931: 501), but publishes only two. One has to hope that the excavators published a representative sample of the overall assemblage, rather than preferentially focusing on those items which were deemed of importance or interest to them, but this seems unlikely.

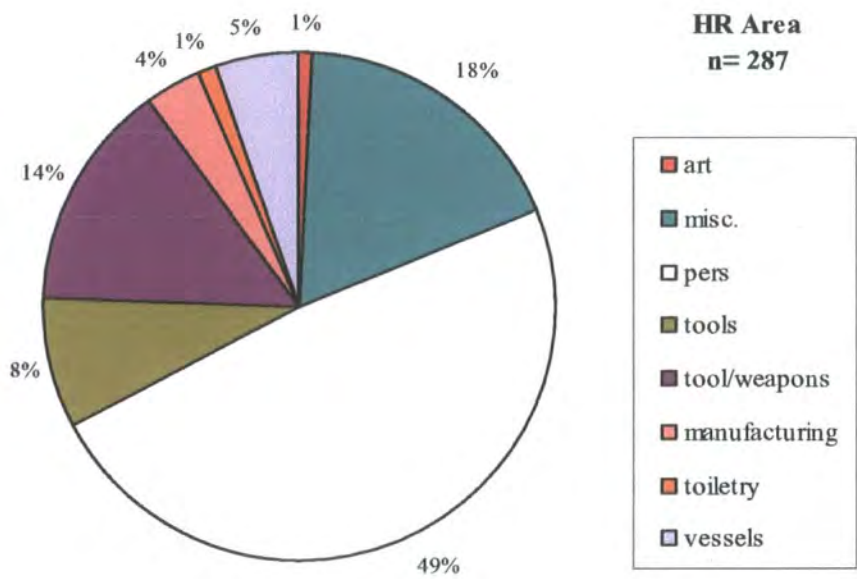
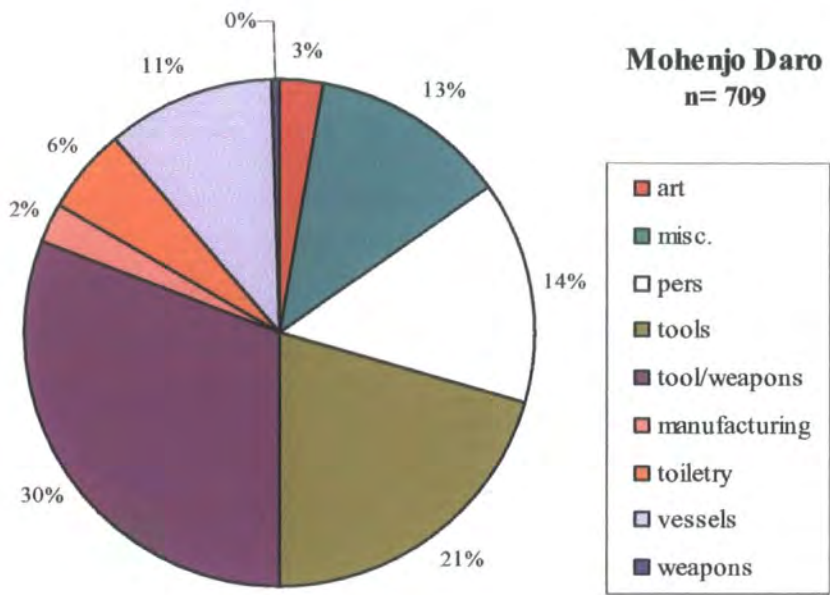
The potentially distorting effects of partial publication are illustrated by the Lothal excavations. The site report illustrates and discusses 129 copper artefacts, but states that around 1500 metal artefacts were recovered at the site (Rao 1973: 522). Requests by the author to view *all* copper objects at the site museum (supposedly where the Archaeological Survey of India believes all material to be stored and displayed) produced 258 objects, not including a further 12 which are clearly illustrated in the report but no longer present at the Museum or its archives. Rao (1985: 533) mentions that nearly 25% of the artefacts were items of 'personal adornment'. In the published sample, the proportion comes to 35%. However, for some types of artefact, Rao includes the total number excavated; this would allow a re-working of the data where 'personal adornment' accounts for 57% of the total assemblage. The figure for objects currently in store at the site museum is 43%.

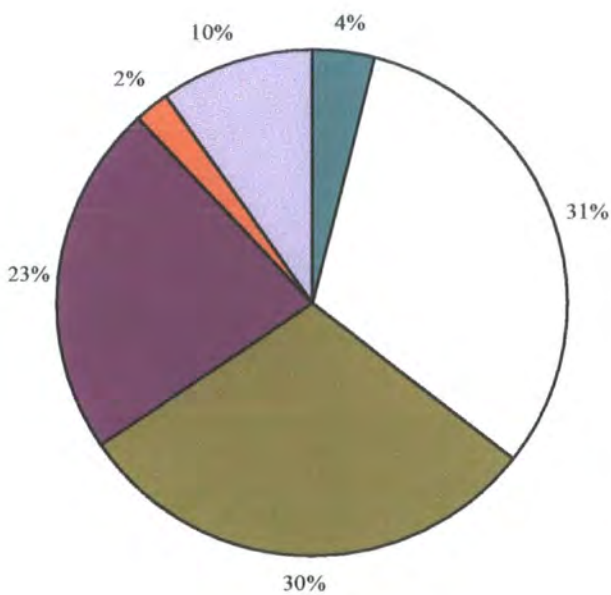
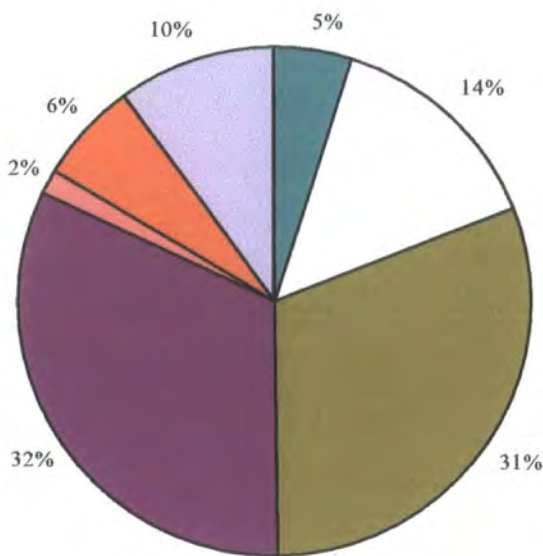
There is therefore some necessity to estimate how accurately the published records, which form the basis of much of the discussion in Chapter 4, reflect the reality of the metalwork recovered from Harappan sites. Three opportunities exist in which to do this: Heidi Miller's work on the Chanhudaro metalwork (2000; pers. comm.) can be compared to Mackay's (1943) published sample, the material from the Lothal site museum (including the identified missing pieces) can be compared to Rao's report (Rao 1973) and the Mohenjo Daro report can be compared to the HR area field register (Jansen and Urban 1985), which contains an entry for every object found. Unfortunately, none of these 'test cases' is itself without issue. The low number of metallic objects at Lothal compared to the total number supposedly recovered is problematic, but is probably the result of a high number of fragments and objects too corroded and tiny to be identified. The same is probably the case for Miller's Chanhudaro data (the Boston Museum of Fine Arts, where the bulk of the material is kept, is unlikely to have kept hundreds of unidentifiable copper fragments). Conversely, in the HR area field register, 56% of the entries for copper artefacts refer to unnumbered 'fragments', 'pieces', 'corroded copper', 'object(s)', 'lumps' and 'bit(s)'. These have all been omitted from the analyses. It is obvious that many finds of metal will be corroded beyond recognition, and this serves as a reminder that the archaeological record may be significantly affected by the preferential corrosion of some types of artefact. Confidence in the HR register is further dissuaded by entries

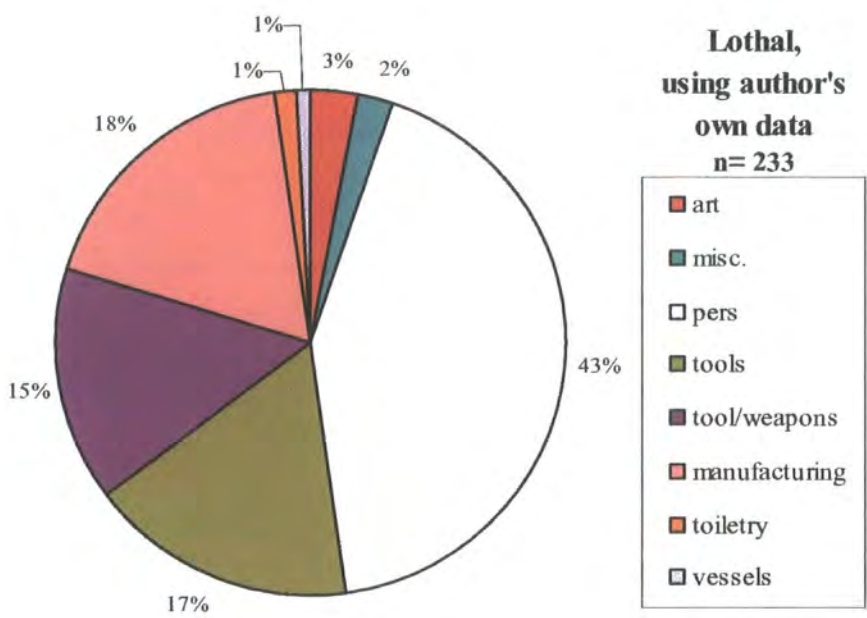
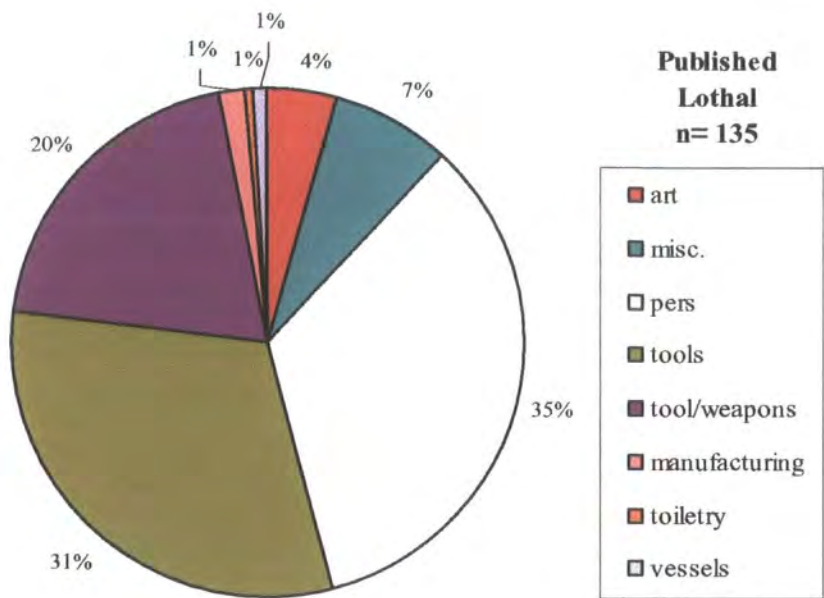
such as ‘a lot of unimportant antiquities’ (Jansen and Urban 1985: 35, field book entry 2661), and there is no guarantee that the HR area is representative of the entire site (Chapter 3 suggests that it is *not*). At Lothal, the fact that some artefacts (including the most famous and best preserved from the site) were published but no longer present, despite the assertions of both the curator and the Archaeological Survey of India that all material was stored there, raises the possibility of less visible gaps in the assemblage.

Despite these issues, the HR area field register, Miller’s Chanhudaro data and the Lothal material display very similar differences to the published data. The contrast between the published data and updated data at each site clearly indicate a consistent under-representation of ‘personal adornment’ in the published data from Mohenjo Daro, Lothal and Chanhudaro. In the HR area, the most common artefacts in this category are beads, closely followed by bangles and rings. The same is true at Chanhudaro, and at Lothal over 20% of the recognisable copper artefacts were bangles or bangle fragments. The relative proportions of all other artefact categories remain roughly unchanged, bar decreased size due to the increased number of items of ‘personal adornment’. At Lothal, the ‘manufacturing’ category increases in size, and this is due to the inclusion of a significant number of rods in the category. The actual function of these objects is obscure, and the likelihood is that many are simply corroded tools such as awls. However, the large number of finished artefacts in the Indus which have apparently been fashioned from metal rods of varying thicknesses (primarily the bangles, rings and chisels which are so numerous at Indus sites) is strongly suggestive that many of these rods were not objects in themselves, but destined instead to be formed into some other finished item.

The consistent under-representation of ‘personal adornment’ in these three test cases provides a strong case for supposing that the same will also have occurred in the published data from Harappa (Vats 1940). The figures generated below, and in the discussion of metalwork in Chapter 4, for Mohenjo Daro and Harappa must be viewed with this very probable bias in mind. For Chanhudaro and Lothal, Miller’s and the present author’s data have been used in preference to the published reports. The smaller sites of Kuntasi, Surkotada and Shortughai appear to have been fully published, possibly because of the small amount of material recovered, and do not suffer from the problem of selective publication.







Appendix E: Metalwork Data.

Part 1: Numbers of artefacts and assigned functional categories at each site.

Site	Source	Artefact	Number Published	Functional Category	Comment
Chanhudaro	H. J. Miller <i>pers comm</i>	arrow type 1	27	tw	
Chanhudaro	H. J. Miller <i>pers comm</i>	bangles	35	p	
Chanhudaro	H. J. Miller <i>pers comm</i>	beads	84	p	
Chanhudaro	H. J. Miller <i>pers comm</i>	blade with one straight edge types 4, 5	7	tw	
Chanhudaro	H. J. Miller <i>pers comm</i>	coils	48	p	
Chanhudaro	H. J. Miller <i>pers comm</i>	fishhooks	9	t	
Chanhudaro	H. J. Miller <i>pers comm</i>	long rect & thin blade (unplaced)	2	m	
Chanhudaro	H. J. Miller <i>pers comm</i>	misc flat pieces	21	m	
Chanhudaro	H. J. Miller <i>pers comm</i>	pendants	4	p	
Chanhudaro	H. J. Miller <i>pers comm</i>	pins	12	p	
Chanhudaro	H. J. Miller <i>pers comm</i>	rods of equal round and square section also type 9	9	t	
Chanhudaro	H. J. Miller <i>pers comm</i>	round rods type 11	54	t	
Chanhudaro	H. J. Miller <i>pers comm</i>	square rods type 9	64	t	
Chanhudaro	H. J. Miller <i>pers comm</i>	square rods with elongated point type 10	21	t	
Chanhudaro	H. J. Miller <i>pers comm</i>	tanged blade type 2	53	tw	
Chanhudaro	H. J. Miller <i>pers comm</i>	tubes type 12	16	t	
Chanhudaro	H. J. Miller <i>pers comm</i>	type 3 blades	44	tw	
Chanhudaro	H. J. Miller <i>pers comm</i>	unique shapes, types 6, 7	13	toi	
Chanhudaro	Mackay 1943	vessels	56	v	
Gurob	Thomas 1981	adze	2	tw	these are flat celts
Gurob	Thomas 1981	arrow/lancehe ad	10	tw	midrib, voluted tang

Site	Source	Artefact	Number Published	Functional Category	Comment
Gurob	Thomas 1981	bowl	1	v	plain, imperfectly circular with ovoid base.
Gurob	Thomas 1981	chisel	3	t	non-cutting edge shaped into tenon
Gurob	Thomas 1981	conical rasp	6	t	
Gurob	Thomas 1981	earrings	2	p	pair. Spiralled wire
Gurob	Thomas 1981	fish hook	14	t	not barbed
Gurob	Thomas 1981	hair curler	5	toi	knife which recesses into a trough, linked by pivot
Gurob	Thomas 1981	harpoon	1	tw	
Gurob	Thomas 1981	knife	23	tw	One piece with handle
Gurob	Thomas 1981	knife handle	1	tw	
Gurob	Thomas 1981	kohl stick	11	toi	haematite stick with bronze handle, now corroded
Gurob	Thomas 1981	mirror	1	toi	
Gurob	Thomas 1981	needle	66	t	
Gurob	Thomas 1981	points	8	toi	interpreted by modern analogy and findspot near to cosmetic jars as associated with tatooing
Gurob	Thomas 1981	punch	6	t	
Gurob	Thomas 1981	razor	2	toi	
Gurob	Thomas 1981	ring	1	p	crocodile image on bezel
Gurob	Thomas 1981	spoon	1	toi	unguent or cosmetic spoon?
Gurob	Thomas 1981	tweezers	3	toi	
Harappa	Vats 1940	adze	9	tw	
Harappa	Vats 1940	arrow	4	tw	
Harappa	Vats 1940	awl	1	t	
Harappa	Vats 1940	axe	15	tw	
Harappa	Vats 1940	bangle	12	p	
Harappa	Vats 1940	bead	2	p	
Harappa	Vats 1940	bowl	1	v	
Harappa	Vats 1940	cast strips	2	man	
Harappa	Vats 1940	chisel	18	t	
Harappa	Vats 1940	chopper	1	t	looks like a modern kitchen cleaver
Harappa	Vats 1940	cup	1	v	
Harappa	Vats 1940	dagger	10	tw	
Harappa	Vats 1940	dish	5	v	
Harappa	Vats 1940	double-axe	2	tw	
Harappa	Vats 1940	earring	6	p	
Harappa	Vats 1940	figurine	1	a	man on chariot
Harappa	Vats 1940	fish-hook	1	t	
Harappa	Vats 1940	flat strips (being beaten into hollow bangles)	4	man	
Harappa	Vats 1940	gouges	4	t	
Harappa	Vats 1940	hasp	1	p	

Site	Source	Artefact	Number Published	Functional Category	Comment
Harappa	Vats 1940	hook	1	t	
Harappa	Vats 1940	jar	1	v	
Harappa	Vats 1940	knife	8	tw	
Harappa	Vats 1940	lancehead	1	tw	
Harappa	Vats 1940	latch	2	m	
Harappa	Vats 1940	macehead	1	w	
Harappa	Vats 1940	mirror	1	toi	
Harappa	Vats 1940	nail-parer	1	toi	
Harappa	Vats 1940	needle	2	t	
Harappa	Vats 1940	pin	4	p	
Harappa	Vats 1940	razor	2	toi	
Harappa	Vats 1940	rectangular pieces	4	man	
Harappa	Vats 1940	ring	5	p	
Harappa	Vats 1940	rod (being beaten into solid bangle	1	man	
Harappa	Vats 1940	saw	2	t	
Harappa	Vats 1940	scale-beam	1	m	
Harappa	Vats 1940	scrapers	2	t	
Harappa	Vats 1940	sheet/ hammered pieces	3	m	
Harappa	Vats 1940	spear	39	tw	
Harappa	Vats 1940	stylus	1	m	
Harappa	Vats 1940	terminal	1	p	
Harappa	Vats 1940	toilet set	1	toi	
Harappa	Vats 1940	vase	2	v	
Hissar III	Schmidt 1937	arrow	2	tw	
Hissar III	Schmidt 1937	awl/ needle	1	t	
Hissar III	Schmidt 1937	axe	1	tw	
Hissar III	Schmidt 1937	blade	2	tw	
Hissar III	Schmidt 1937	bowl	4	v	
Hissar III	Schmidt 1937	box	2	v	
Hissar III	Schmidt 1937	bracelets	17	p	
Hissar III	Schmidt 1937	chisel	2	t	
Hissar III	Schmidt 1937	cup	3	v	
Hissar III	Schmidt 1937	dagger	12	tw	
Hissar III	Schmidt 1937	diadem	6	p	
Hissar III	Schmidt 1937	disk frag/ slag?	1	man	
Hissar III	Schmidt 1937	earring	38	p	
Hissar III	Schmidt 1937	figurine- animal	2	a	
Hissar III	Schmidt 1937	figurine- female	4	a	
Hissar III	Schmidt 1937	figurine- male	13	a	
Hissar III	Schmidt 1937	'human figurines'	3	toi	2 of these are Indus-style razors
Hissar III	Schmidt 1937	knife	3	tw	
Hissar III	Schmidt 1937	lancehead	8	tw	

Site	Source	Artefact	Number Published	Functional Category	Comment
Hissar III	Schmidt 1937	macehead	2	w	
Hissar III	Schmidt 1937	mattock	5	t	
Hissar III	Schmidt 1937	mini bowl	5	v	
Hissar III	Schmidt 1937	mini mattock	2	t	
Hissar III	Schmidt 1937	mirror	3	toi	
Hissar III	Schmidt 1937	ornament	1	m	
Hissar III	Schmidt 1937	pendant	10	p	
Hissar III	Schmidt 1937	pin	5	p	
Hissar III	Schmidt 1937	plate	1	v	
Hissar III	Schmidt 1937	point	1	t	
Hissar III	Schmidt 1937	problematic object (H3195, plate LIV)	1	tw	pointe bifide/ arrow butt
Hissar III	Schmidt 1937	ring	9	p	
Hissar III	Schmidt 1937	seal	4	m	
Hissar III	Schmidt 1937	spear	10	tw	
Hissar III	Schmidt 1937	tacks	2	m	
Hissar III	Schmidt 1937	tube	6	p	'apparently worn on the neck' p.207 of report
Hissar III	Schmidt 1937	wand	11	m	
Hissar III	Schmidt 1937	wire	1	man	
Kahun	Petrie Museum (online)	bowl	1	v	hammered, circular
Kahun	Petrie Museum (online)	chisel	4	t	set into large wooden handle
Kahun	Petrie Museum (online)	copper ore	3	man	2 pieces
Kahun	Petrie Museum (online)	fish hook	1	t	barbed
Kahun	Petrie Museum (online)	hammered metal	1	man	
Kahun	Petrie Museum (online)	handle	3	t	
Kahun	Petrie Museum (online)	hatchet	2	tw	
Kahun	Petrie Museum (online)	hook	1	t	(part of)
Kahun	Petrie Museum (online)	knife	8	tw	
Kahun	Petrie Museum (online)	mirror	1	toi	with Hathor faced wooden handle
Kahun	Petrie Museum	model chisel	7	m	fragments

Site	Source	Artefact	Number Published	Functional Category	Comment
	(online)				
Kahun	Petrie Museum (online)	model hatchet	3	m	
Kahun	Petrie Museum (online)	model knife	1	m	
Kahun	Petrie Museum (online)	needle	26	t	w/ eye
Kahun	Petrie Museum (online)	piercer	6	t	set into nut handle
Kahun	Petrie Museum (online)	torque	1	p	bent wire with hammered ends creating finials
Kahun	Petrie Museum (online)	tweezers	1	toi	
Kish Cem A	Mackay 1925, 1929	bangle	18	p	
Kish Cem A	Mackay 1925, 1929	beads	2	p	
Kish Cem A	Mackay 1925, 1929	chisel	7	t	
Kish Cem A	Mackay 1925, 1929	curved blades	17	tw	
Kish Cem A	Mackay 1925, 1929	dagger	9	tw	
Kish Cem A	Mackay 1925, 1929	earring	1	p	
Kish Cem A	Mackay 1925, 1929	hairpins	96	p	
Kish Cem A	Mackay 1925, 1929	knife	4	tw	
Kish Cem A	Mackay 1925, 1929	medallions	10	p	
Kish Cem A	Mackay 1925, 1929	needle	3	t	
Kish Cem A	Mackay 1925, 1929	nose ornaments	3	p	
Kish Cem A	Mackay 1925, 1929	pin	1	p	
Kish Cem A	Mackay 1925, 1929	razor	14	toi	
Kish Cem A	Mackay 1925, 1929	ring	13	p	
Kish Cem A	Mackay 1925, 1929	ring	2	p	Mackay doesn't state what they're made of (Mackay 1925: 53)
Kish Cem A	Mackay 1925, 1929	saw	1	t	
Kish Cem A	Mackay 1925, 1929	socketed axes	11	tw	this figure must include examples found in the mound deriving bfrom

Site	Source	Artefact	Number Published	Functional Category	Comment
					burials.
Kish Cem A	Mackay 1925, 1929	spear	1	tw	
Kish Cem A	Mackay 1925, 1929	toilet set	11	toi	
Kish Cem A	Mackay 1925, 1929	unsocketed axes	9	tw	
Kish Cem A	Mackay 1925, 1929	vessels	45	v	
Kuntasi	Dhavalikar et. al. 1996.	amulet	1	p	
Kuntasi	Dhavalikar et. al. 1996.	axe	3	tw	
Kuntasi	Dhavalikar et. al. 1996.	bangle	24	p	5 in 1 set
Kuntasi	Dhavalikar et. al. 1996.	blade	6	tw	
Kuntasi	Dhavalikar et. al. 1996.	chisel	2	t	
Kuntasi	Dhavalikar et. al. 1996.	dagger	1	tw	
Kuntasi	Dhavalikar et. al. 1996.	drill	2	t	
Kuntasi	Dhavalikar et. al. 1996.	fish-hook	5	t	
Kuntasi	Dhavalikar et. al. 1996.	hairpin	1	p	
Kuntasi	Dhavalikar et. al. 1996.	knife	3	tw	
Kuntasi	Dhavalikar et. al. 1996.	mirror	1	toi	
Kuntasi	Dhavalikar et. al. 1996.	nail	1	m	
Kuntasi	Dhavalikar et. al. 1996.	pendant	2	p	
Kuntasi	Dhavalikar et. al. 1996.	pin	2	p	spirals; may be rings but pins here for consistency
Kuntasi	Dhavalikar et. al. 1996.	ring	13	p	
Kuntasi	Dhavalikar et. al. 1996.	rod	3	man	
Kuntasi	Dhavalikar et. al. 1996.	spacer (bead)	1	p	
Kuntasi	Dhavalikar et. al. 1996.	spear	1	tw	
Lothal	Rao 1985	animal figurines	6	a	leopard not illustrated, and gorilla not illustrated or counted here.
Lothal	Rao 1985	arrow	4	tw	
Lothal	Rao 1985	auger bit	1	t	

Site	Source	Artefact	Number Published	Functional Category	Comment
Lothal	Rao 1985	awl	6	t	
Lothal	Rao 1985	axe	10	tw	
Lothal	Rao 1985	bangle	5	p	
Lothal	Rao 1985	beads	20	p	
Lothal	Rao 1985	blade	6	tw	
Lothal	Rao 1985	chain	2	m	
Lothal	Rao 1985	chisel	10	t	
Lothal	Rao 1985	dagger	3	tw	
Lothal	Rao 1985	drill	3	t	
Lothal	Rao 1985	earring	8	p	
Lothal	Rao 1985	fish-hook	11	t	
Lothal	Rao 1985	ingot	1	man	
Lothal	Rao 1985	jar	1	v	
Lothal	Rao 1985	mirror	1	toi	
Lothal	Rao 1985	nail	4	m	
Lothal	Rao 1985	needle	5	t	
Lothal	Rao 1985	ornament	1	p	
Lothal	Rao 1985	plainer bit	1	t	
Lothal	Rao 1985	ring	12	p	
Lothal	Rao 1985	rod	6	man	
Lothal	Rao 1985	saw	1	t	
Lothal	Rao 1985	seal	1	m	
Lothal	Rao 1985	sheet	1	man	
Lothal	Rao 1985	spear	4	tw	
Lothal	Rao 1985	spoon	1	m	
Mohenjo-Daro	Marshall 1931	adze	11	tw	'long and narrow axes' in text
Mohenjo-Daro	Mackay 1938	adze	1	tw	
Mohenjo-Daro	Marshall 1931	animal figurines	3	a	
mohenjo-Daro	Mackay 1938	animal figurines	11	a	
Mohenjo-Daro	Marshall 1931	anthropomorphic figurines	2	a	
Mohenjo-Daro	Marshall 1931	arrow	1	tw	
Mohenjo-Daro	Mackay 1938	arrow	20	tw	
Mohenjo-Daro	Marshall 1931	awl	4	t	
Mohenjo-Daro	Mackay 1938	awl	15	t	
Mohenjo-Daro	Marshall 1931	axe	7	tw	'short broad axes' in text
Mohenjo-Daro	Mackay 1938	axe	49	tw	
Mohenjo-Daro	Mackay 1938	axe-adze	1	t	sim to shahdad eg.
Mohenjo-Daro	Marshall 1931	bangle	7	p	
Mohenjo-	Mackay 1938	bangle	28	p	

Site	Source	Artefact	Number Published	Functional Category	Comment
Daro					
Mohenjo-Daro	Mackay 1938	bead	15	p	
Mohenjo-Daro	Marshall 1931	bead	6	p	
Mohenjo-Daro	Mackay 1938	bolt	6	m	
Mohenjo-Daro	Marshall 1931	button	5	p	
Mohenjo-Daro	Mackay 1938	canister	2	v	
Mohenjo-Daro	Marshall 1931	casting	2	man	
Mohenjo-Daro	Mackay 1938	casting	2	man	
Mohenjo-Daro	Marshall 1931	chain	2	t	
Mohenjo-Daro	Marshall 1931	chisel	14	t	
Mohenjo-Daro	Mackay 1938	chisel	71	t	
Mohenjo-Daro	Mackay 1938	cone	4	m	one is described as a 'head ornament'; p.529
Mohenjo-Daro	Mackay 1938	copper-melt	4	man	
Mohenjo-Daro	Mackay 1938	dagger	26	tw	
Mohenjo-Daro	Marshall 1931	dish	2	v	
Mohenjo-Daro	Mackay 1938	dish	6	v	
Mohenjo-Daro	Mackay 1938	drill	2	t	
Mohenjo-Daro	Marshall 1931	earring	3	p	
Mohenjo-Daro	Marshall 1931	female figurine	1	a	
Mohenjo-Daro	Mackay 1938	female figurine	1	a	
Mohenjo-Daro	Marshall 1931	fish-hook	2	t	
Mohenjo-Daro	Mackay 1938	fish-hook	15	t	
Mohenjo-Daro	Mackay 1938	foot from figurine	1	a	
Mohenjo-Daro	Mackay 1938	gamesmen	2	m	
Mohenjo-Daro	Mackay 1938	hook	2	t	
Mohenjo-Daro	Mackay 1938	ingot	4	man	
Mohenjo-Daro	Mackay 1938	inlay	1	m	
Mohenjo-Daro	Mackay 1938	inscribed tablets	26	m	

Site	Source	Artefact	Number Published	Functional Category	Comment
Mohenjo-Daro	Marshall 1931	inscribed tablets	41	m	
Mohenjo-Daro	Mackay 1938	jar-cover	1	v	
Mohenjo-Daro	Marshall 1931	knife	4	tw	only 1 a true knife, others may be daggers
Mohenjo-Daro	Mackay 1938	knife	68	tw	
Mohenjo-Daro	Mackay 1938	kohl-pot	2	toi	
Mohenjo-Daro	Mackay 1938	kohl-stick	3	toi	
Mohenjo-Daro	Mackay 1938	lancehead	5	tw	
Mohenjo-Daro	Marshall 1931	lid	4	v	
Mohenjo-Daro	Mackay 1938	lump	1	man	counted as an ingot
Mohenjo-Daro	Mackay 1938	mirror	6	toi	
Mohenjo-Daro	Marshall 1931	necklace terminal	1	p	
Mohenjo-Daro	Marshall 1931	needle	3	t	
Mohenjo-Daro	Mackay 1938	needle	1	t	
Mohenjo-Daro	Mackay 1938	ornament	2	m	
Mohenjo-Daro	Marshall 1931	pan	2	v	
Mohenjo-Daro	Mackay 1938	pan	11	v	
Mohenjo-Daro	Mackay 1938	pin	3	p	
Mohenjo-Daro	Mackay 1938	plumb-bob	1	t	
Mohenjo-Daro	Mackay 1938	point	4	t	
Mohenjo-Daro	Marshall 1931	razor	2	toi	
Mohenjo-Daro	Mackay 1938	razor	26	toi	
Mohenjo-Daro	Mackay 1938	reamer	1	t	
Mohenjo-Daro	Marshall 1931	ring	9	p	
Mohenjo-Daro	Mackay 1938	ring	17	p	
Mohenjo-Daro	Marshall 1931	rod	4	man	
Mohenjo-Daro	Marshall 1931	saw	2	t	
Mohenjo-Daro	Mackay 1938	saw	4	t	
Mohenjo-Daro	Mackay 1938	scale-beam	1	m	

Site	Source	Artefact	Number Published	Functional Category	Comment
Mohenjo-Daro	Mackay 1938	scale-pan	5	v	
Mohenjo-Daro	Marshall 1931	sickle-shaped blade	1	tw	
Mohenjo-Daro	Mackay 1938	sickle-shaped blade	2	tw	
Mohenjo-Daro	Marshall 1931	spacer	3	p	
Mohenjo-Daro	Mackay 1938	spacer	2	p	
Mohenjo-Daro	Mackay 1938	spatula	3	t	
Mohenjo-Daro	Marshall 1931	spear	11	tw	
Mohenjo-Daro	Mackay 1938	spear	13	tw	
Mohenjo-Daro	Mackay 1938	spoon	1	m	
Mohenjo-Daro	Mackay 1938	sword	3	w	
Mohenjo-Daro	Mackay 1938	terminal	1	p	
Mohenjo-Daro	Mackay 1938	vase	32	v	
Mohenjo-Daro	Marshall 1931	vessels	16	v	
Nippur	Stone 1987	arrow	1	tw	
Nippur	Stone 1987	awl	4	t	
Nippur	Stone 1987	bangle	8	p	
Nippur	Stone 1987	blade	4	tw	
Nippur	Stone 1987	chisel	2	t	
Nippur	Stone 1987	cup	1	v	
Nippur	Stone 1987	digging tool	1	t	
Nippur	Stone 1987	drill	1	t	
Nippur	Stone 1987	earring	1	p	
Nippur	Stone 1987	fish-hook	1	t	
Nippur	Stone 1987	fragment	7		not counted
Nippur	Stone 1987	heavy piece	1	m	
Nippur	Stone 1987	iron bracelet	1	p	
Nippur	Stone 1987	iron drill	1	t	
Nippur	Stone 1987	iron point	1	t	
Nippur	Stone 1987	knife	1	tw	
Nippur	Stone 1987	nail	4	m	
Nippur	Stone 1987	needle	3	t	
Nippur	Stone 1987	ornament	1	m	
Nippur	Stone 1987	pin	10	p	
Nippur	Stone 1987	pin (gold plated)	1	p	
Nippur	Stone 1987	ring	11	p	
Nippur	Stone 1987	rod	1	man	
Nippur	Stone 1987	sheet/disk	1	m	
Nippur	Stone 1987	sickle	2	t	

Site	Source	Artefact	Number Published	Functional Category	Comment
Nippur	Stone 1987	sleeve	1	man	
Nippur	Stone 1987	spatula	1	t	
Nippur	Stone 1987	vessel lid	1	v	
Royal Cem, Ur	Woolley 1934	arrows	7	tw	
Royal Cem, Ur	Woolley 1934	awl	3	t	
Royal Cem, Ur	Woolley 1934	axe	102	tw	
Royal Cem, Ur	Woolley 1934	blade	1	tw	
Royal Cem, Ur	Woolley 1934	bracelet	41	p	
Royal Cem, Ur	Woolley 1934	bucket	1	v	
Royal Cem, Ur	Woolley 1934	chisel	7	t	
Royal Cem, Ur	Woolley 1934	dagger	33	tw	
Royal Cem, Ur	Woolley 1934	drill	2	t	
Royal Cem, Ur	Woolley 1934	ear-ring	44	p	
Royal Cem, Ur	Woolley 1934	fish-hook	1	t	
Royal Cem, Ur	Woolley 1934	fish-spear	1	t	
Royal Cem, Ur	Woolley 1934	gaff	1	m	
Royal Cem, Ur	Woolley 1934	harpoon	1	t	
Royal Cem, Ur	Woolley 1934	hasps	2	p	
Royal Cem, Ur	Woolley 1934	holdfasts and chape	1	m	
Royal Cem, Ur	Woolley 1934	knife	1	tw	
Royal Cem, Ur	Woolley 1934	mirror	1	toi	
Royal Cem, Ur	Woolley 1934	pin	142	p	
Royal Cem, Ur	Woolley 1934	razor	8	toi	
Royal Cem, Ur	Woolley 1934	reticule	22	toi	
Royal Cem, Ur	Woolley 1934	ring	10	p	
Royal Cem, Ur	Woolley 1934	ring	32	p	
Royal Cem, Ur	Woolley 1934	roundel	1	m	
Royal Cem, Ur	Woolley 1934	sandal fasteners	2	m	
Royal Cem, Ur	Woolley 1934	staple	1	t	

Site	Source	Artefact	Number Published	Functional Category	Comment
Royal Cem, Ur	Woolley 1934	toe-ring	7	p	
Royal Cem, Ur	Woolley 1934	toilet instrument	3	toi	
Royal Cem, Ur	Woolley 1934	tool	5	t	
Royal Cem, Ur	Woolley 1934	vessels	81	v	
Shahdad Cem A	Hakemi 1997	adze	4	t	axes/ adze differentiatio is inconsistent in catalogue. Not always illustrated, either.
Shahdad Cem A	Hakemi 1997	arrow	2	tw	
Shahdad Cem A	Hakemi 1997	awl	8	t	
Shahdad Cem A	Hakemi 1997	axe	19	tw	
Shahdad Cem A	Hakemi 1997	axe/adze	1	t	Hissar/ Mohenjo Daro parallel
Shahdad Cem A	Hakemi 1997	bar	4	m	
Shahdad Cem A	Hakemi 1997	beads=string	2	p	
Shahdad Cem A	Hakemi 1997	blade	5	tw	blade on p343 is similar to Indus eggs
Shahdad Cem A	Hakemi 1997	boiler	1	m	
Shahdad Cem A	Hakemi 1997	bracelets	4	p	
Shahdad Cem A	Hakemi 1997	chisel	5	t	
Shahdad Cem A	Hakemi 1997	dagger	16	tw	
Shahdad Cem A	Hakemi 1997	earring	5	p	
Shahdad Cem A	Hakemi 1997	instrument	1	m	interpreted as part of an instrument, but is essentially a funnel shape with decorations. Drinking?
Shahdad Cem A	Hakemi 1997	knife	7	tw	
Shahdad Cem A	Hakemi 1997	mace	1	w	couple more in lead
Shahdad Cem A	Hakemi 1997	mirror	8	toi	
Shahdad Cem A	Hakemi 1997	needle	3	t	
Shahdad Cem A	Hakemi 1997	pin	188	p	
Shahdad Cem A	Hakemi 1997	razor	1	toi	
Shahdad Cem A	Hakemi 1997	ring	18	p	
Shahdad Cem	Hakemi 1997	saw	2	t	

Site	Source	Artefact	Number Published	Functional Category	Comment
A					
Shahdad Cem A	Hakemi 1997	screw auger	2	t	
Shahdad Cem A	Hakemi 1997	seal	19	m	
Shahdad Cem A	Hakemi 1997	spindle	1	t	
Shahdad Cem A	Hakemi 1997	standard	1	m	
Shahdad Cem A	Hakemi 1997	stiletto	1	tw	
Shahdad Cem A	Hakemi 1997	tube	2	m	
Shahdad Cem A	Hakemi 1997	vessel	288	v	
Shortughai	Francfort 1989	?crown?	1	p	
Shortughai	Francfort 1989	awls	2	t	
Shortughai	Francfort 1989	drill	5	t	
Shortughai	Francfort 1989	fragment	5		not counted
Shortughai	Francfort 1989	hairpins	11	p	
Shortughai	Francfort 1989	hook	1	t	
Shortughai	Francfort 1989	mirror	1	toi	
Shortughai	Francfort 1989	saw? Blades	2	t	
Surkotada	Joshi 1990	arrow	4	tw	
Surkotada	Joshi 1990	axe	1	tw	
Surkotada	Joshi 1990	bangle	14	p	
Surkotada	Joshi 1990	bead	3	p	
Surkotada	Joshi 1990	chain	1	t	
Surkotada	Joshi 1990	chisel	3	t	
Surkotada	Joshi 1990	fish-hook	1	t	
Surkotada	Joshi 1990	foil	1	man	
Surkotada	Joshi 1990	jar-lid	1	v	
Surkotada	Joshi 1990	knife	3	tw	
Surkotada	Joshi 1990	needles	2	t	
Surkotada	Joshi 1990	pin	6	p	
Surkotada	Joshi 1990	ring	20	p	
Surkotada	Joshi 1990	rod	7	man	
Surkotada	Joshi 1990	spear	2	tw	
Surkotada	Joshi 1990	tube drill	1	t	
Surkotada	Joshi 1990	Unknown	60		not counted
Susa	Tallon 1987	arrowheads	4	tw	
Susa	Tallon 1987	awl	1	t	
Susa	Tallon 1987	bracelets	7	p	
Susa	Tallon 1987	buckles	3	p	

Site	Source	Artefact	Number Published	Functional Category	Comment
Susa	Tallon 1987	burins	17	t	
Susa	Tallon 1987	chisel	5	t	
Susa	Tallon 1987	chisels	6	t	
Susa	Tallon 1987	'claquoirs'	1	m	musical instrument
Susa	Tallon 1987	completet toilet sets	10	toi	
Susa	Tallon 1987	Daggers	46	tw	
Susa	Tallon 1987	earings		p	many eggs in precious metal
Susa	Tallon 1987	figurines	16	art	8 from the foundation of the Ninhursag temple of Shulgi, 8 from the temple of Inshushinak
Susa	Tallon 1987	fish-hook	3	t	
Susa	Tallon 1987	flat axes	35	tw	
Susa	Tallon 1987	Folded socket axes	19	tw	
Susa	Tallon 1987	gouges	2	t	
Susa	Tallon 1987	hoes	21	t	
Susa	Tallon 1987	ingots	5	man	
Susa	Tallon 1987	knives	7	tw	
Susa	Tallon 1987	maceheads	5	w	
Susa	Tallon 1987	miniature flat axes and 'herminetts'	10	t	
Susa	Tallon 1987	mirrors	14	toi	
Susa	Tallon 1987	nails/ rivets- cart parts	14	m	
Susa	Tallon 1987	needles	2	t	these are under perforating tools
Susa	Tallon 1987	perforating tools	5	t	
Susa	Tallon 1987	pins	84	p	
Susa	Tallon 1987	'pointes bifides'	61	tw	
Susa	Tallon 1987	pommel	1	tw	pommel type bit
Susa	Tallon 1987	pommels	2	tw	
Susa	Tallon 1987	razors	1	toi	
Susa	Tallon 1987	rings	2	p	
Susa	Tallon 1987	rod	1	man	
Susa	Tallon 1987	sandal	1	m	
Susa	Tallon 1987	saws	6	t	
Susa	Tallon 1987	scale-pan	1	v	
Susa	Tallon 1987	scythe	1	t	
Susa	Tallon 1987	shovel	1	t	
Susa	Tallon 1987	sickles	1	t	
Susa	Tallon 1987	Socketted axes	35	tw	
Susa	Tallon 1987	spatulas	2	t	
Susa	Tallon 1987	spearheads	11	tw	
Susa	Tallon 1987	tranchets	3	t	
Susa	Tallon 1987	various blades	4	t	
Susa	Tallon 1987	vessels	52	v	5 more are lead

Site	Source	Artefact	Number Published	Functional Category	Comment
Susa	Tallon 1987	war hammers	5	w	
Tell Brak	Oates and Oates 2001	?tool handle	1	t	
Tell Brak	Oates and Oates 2001	awl	27	t	
Tell Brak	Oates and Oates 2001	bead	1	p	
Tell Brak	Oates and Oates 2001	blade	1	tw	
Tell Brak	Oates and Oates 2001	buckle	1	p	
Tell Brak	Oates and Oates 2001	chisel	13	t	
Tell Brak	Oates and Oates 2001	clawed hook	2	m	
Tell Brak	Oates and Oates 2001	cosmetic applicator?	1	toi	
Tell Brak	Oates and Oates 2001	dagger	3	tw	
Tell Brak	Oates and Oates 2001	earpick?	1	toi	
Tell Brak	Oates and Oates 2001	flat axe	5	tw	
Tell Brak	Oates and Oates 2001	fragment of plate with rivet attached and hole for second rivet	2	m	
Tell Brak	Oates and Oates 2001	gouges	2	t	
Tell Brak	Oates and Oates 2001	loop	1	m	
Tell Brak	Oates and Oates 2001	nail	16	m	
Tell Brak	Oates and Oates 2001	needle	3	t	

Site	Source	Artefact	Number Published	Functional Category	Comment
Tell Brak	Oates and Oates 2001	pin or hinge	1	m	no 97
Tell Brak	Oates and Oates 2001	pins	49	p	
Tell Brak	Oates and Oates 2001	ring	17	p	
Tell Brak	Oates and Oates 2001	ring with 2 assoc prongs	1	m	
Tell Brak	Oates and Oates 2001	saw? Blades	1	t	
Tell Brak	Oates and Oates 2001	sickle	14	t	
Tell Brak	Oates and Oates 2001	socketed axes	1	tw	socketted, Philip type 2
Tell Brak	Oates and Oates 2001	spear	3	tw	
Tell Brak	Oates and Oates 2001	spiral ring	2	p	
Tell Brak	Oates and Oates 2001	spirals- head? pin	1	p	
Tell Brak	Oates and Oates 2001	spoon	3	m	
Tell Brak	Oates and Oates 2001	tool	2	t	number 20, 23, 78 in catalogue.
Tell Brak	Oates and Oates 2001	tube	1	m	
Tell Brak	Oates and Oates 2001	tweezers	3	toi	
Tell Brak	Oates and Oates 2001	two=pronged fork	1	m	
Tell Brak	Oates and Oates 2001	weight/ plumb bob	1	t	

Site	Source	Artefact	Number Published	Functional Category	Comment
Tell Brak	Oates and Oates 2001	wire (folded)	1	man	
Ur	Woolley and Mallowan 1976	?nutmeg grater	1	t	
Ur	Woolley and Mallowan 1976	adze	1	t	
Ur	Woolley and Mallowan 1976	axe	1	tw	
Ur	Woolley and Mallowan 1976	borer	1	t	
Ur	Woolley and Mallowan 1976	chisel	3	t	
Ur	Woolley and Mallowan 1976	crescent moon	2	m	
Ur	Woolley and Mallowan 1976	dagger	7	tw	
Ur	Woolley and Mallowan 1976	fish-hook	3	t	
Ur	Woolley and Mallowan 1976	foundation tablet	1	m	
Ur	Woolley and Mallowan 1976	hoes	2	t	
Ur	Woolley and Mallowan 1976	ingot	2	man	
Ur	Woolley and Mallowan 1976	knife	1	tw	
Ur	Woolley and Mallowan 1976	mirror	1	toi	
Ur	Woolley and Mallowan 1976	pin	1	p	
Ur	Woolley and Mallowan 1976	razor	1	toi	
Ur	Woolley and Mallowan 1976	socketed axes	1	tw	
Ur	Woolley and Mallowan 1976	spade	2	t	
Ur	Woolley and Mallowan	statuette	3	a	

Site	Source	Artefact	Number Published	Functional Category	Comment
	1976				
Uruk	Pedde 1992	anglehaken	2	t	fishhook
Uruk	Pedde 1992	äxte	3	tw	
Uruk	Pedde 1992	biele	3	tw	flat axe
Uruk	Pedde 2000	bleche	3	t	spade?
Uruk	Pedde 1992	bügel	2	m	
Uruk	Pedde 1992	Dolche	3	tw	
Uruk	Pedde 1992	figürliches	3	a	figurine
Uruk	Pedde 1992	gabelförmige gegenstände	5	t	pointe bifide/ arrow butt
Uruk	Pedde 2000	gefässe	4	v	bowl
Uruk	Pedde 1992	gründungsfigur en	4	a	
Uruk	Pedde 1992	Hacken	2	t	hoe
Uruk	Pedde 2000	Hülsen	1	toi	cosmetic implement sheaths?
Uruk	Pedde 1992	lance	2	tw	
Uruk	Pedde 1992	Meissel	11	t	chisels
Uruk	Pedde 2000	Nadeln	18	p	pin.
Uruk	Pedde 2000	Nägel	2	m	nail
Uruk	Pedde 1992	pfeilspitzen	1	tw	
Uruk	Pedde 1992	pfrieme	3	t	
Uruk	Pedde 1992	reifen	1	p	
Uruk	Pedde 2000	ringe	3	p	finger ring
Uruk	Pedde 1992	schieben	2	m	
Uruk	Pedde 2000	sicheln	1	t	sickel blade
Uruk	Pedde 1992	spatel	3	t	
Uruk	Pedde 1992	spear	1	tw	
Uruk	Pedde 2000	Speere und Lanzen	1	tw	lance
Uruk	Pedde 2000	spiegel	1	toi	mirror
Uruk	Pedde 2000	stäbe un stifte	8	m	rod
Uruk	Pedde 2000	Streifen und bänder	2	m	
Uruk	Pedde 2000	Varia	1	tw	17641; fragment eines scheibenformigen gegenstandes
Uruk	Pedde 2000	Varia	1	t	14539a; prob a saw
Uruk	Pedde 2000	Varia	1	v	24271; frying pan
Uruk	Pedde 2000	Varia	1	t	1447i; rod tool of some sort

Part 2: Total numbers of objects in each functional category:

	art	misc.	pers	tools	tool/weap ons	manufac turing	toilettry	vessels	weapons	total
Harappa	1	7	29	32	88	11	5	10	1	184
MD	19	89	100	147	219	17	39	76	3	709
Chanhudaro	0	23	183	173	131	0	13	56	0	579
Kuntasi	0	1	44	9	14	3	1	0	0	72
lothal	7	5	99	40	35	42	3	2		233
Shortughai	0	0	12	10	0		1	0	0	23
Surkotada	0	0	43	8	10	8	0	1	0	70
Nippur	0	7	32	17	6	2	0	2	0	66
Ur	3	3	1	13	10	2	2	0	0	34
Tell Brak		28	71	64	13	1	5			182
Uruk	7	16	6	48	15		2	5		99
Kish Cemetery A	0	0	146	11	51	0	25	45	0	278
Ur graves	0	5	278	21	144	0	34	82	0	564
Susa	16	17	96	90	221	6	25	52	10	533
Shahdad		28	217	26	50		9	288	1	619
Hissar III	19	18	91	11	39	2	6	15	2	203
Gurob			3	96	37		31	1		168
Kahun		11	1	41	10	4	2	1		70

Part 3: Description of metalwork assemblages by site.

Uruk (Mesopotamia)

Metalwork from Uruk is detailed in two volumes of the Uruk Kleinfunde (Pedde 1992, 2000). Finds are predominantly from the palace and Eanna temple complexes, although they also derive from the town wall, surface surveys and various other locations around the site. Those selected for discussion here date to Early Dynastic through to Ur III periods (broadly contemporary with the Mature Harappan); the wide chronological period simply serving to bolster a small published sample size.

The metal assemblage at Uruk (as published) is dominated by 'tools' (49%), primarily chisels and needles. 'Tool/ weapons' is another significant category (15%), and Uruk is alike most other large urban centres in having the bulk of its assemblage composed of these two groups. There are no 'weapons'. 'Miscellaneous' comprises 16% of the assemblage and contains mainly indeterminate rods. The remainder is

composed of 'toiletty' (2%), 'personal adornment' (6%; mainly rings and pins) and 'vessels' (5%; the highest proportion for a non-Indus, non-funerary assemblage).

Ur (Mesopotamia)

The Akkadian period at Ur has the most secure chronological links with the Indus Civilisation (Indus seals are found in graves of that period: Woolley 1955: 50), however there is no substantial excavated non-funerary assemblages dating to that period. Therefore, the residential areas of the Old Babylonian Period (Woolley and Mallowan 1976) are considered, alongside the Akkadian period graves from the Royal Cemetery (Woolley 1934).

The amount of metalwork deriving from non-funerary Ur is small (34 objects). The assemblage is primarily composed of 'tools' (38%) and 'tool/weapons' (29%). 'Tool/ weapons' mostly comprises daggers, and includes a socketed axe. There are no 'vessels' and 'personal adornment' (3%) is represented by one pin, however there is 'art' (9%) in the form of three statuettes, and there is some evidence for 'manufacturing' (6%; two ingots). 'Toiletty' (6%) is represented by a mirror and a razor.

The Akkadian period graves from the Royal Cemetery provide a far larger metal assemblage (563 objects) than the later residential areas. They also display a much more directional assemblage, as do the other funerary assemblages, with fewer artefact categories represented overall, and with a limited number dominating the majority of the assemblage. This is entirely what one might expect from deliberately structured and deposited assemblages, such as those composed of grave goods. 48% of the assemblage is composed of 'personal adornment', half of which is pins, and the other half bracelets, rings and earrings. 26% of the assemblage is 'tool/ weapons', and again this category is heavily dominated by just a few artefacts: axes and daggers. 'Vessels' are more common (15%) in the Royal Cemetery than in any non-funerary assemblage. Toiletty (6%) is represented by reticules, razors and distinctive 'toilet sets', which also appear at Harappan sites, the 'A' cemetery at Kish, Susa and possibly Uruk.

Nippur (Mesopotamia)

Stone (1987) discusses two residential areas at Nippur, TA and TB, which have been considered together here. Both are purely domestic in nature, although the design of buildings and administrative documents found suggest to Stone that area TA was occupied by small property owners, whilst area TB was the residential quarter for employees of the state (Stone 1987: 76). Both areas date to the Isin-Larsa and Old Babylonian periods, broadly contemporary with the residential areas of Ur (Stone 1987: 6). The assemblage includes a small number of iron objects, such as a point, a bracelet and a drill; but the vast majority of items are copper or bronze. It is not felt that the limited presence of iron objects in these levels has significantly altered the use of copper and bronze objects, and they have been included in the comparison.

The assemblage at Nippur is composed primarily of personal items (48%), including pins, bracelets, and rings. 'Tools' (26%) and 'tool/weapons' (9%) form a smaller proportion of the total assemblage than at Ur and Uruk. There are no 'weapons'. A number of objects described as 'fragments' have been omitted from this survey.

The 'A' Cemetery at Kish (Mesopotamia)

These graves, excavated by Mackay (1925; 1929) before his work at Mohenjo Daro and Chanhudaro (below) date to the late Early Dynastic period. Like the Royal Cemetery at Ur, the assemblage at Kish is skewed towards the overrepresentation of

just three artefact categories: 'personal adornment' (53%), 'tool/ weapons' (18%) and 'vessels' (16%). The former is composed largely of pins, interpreted by Mackay as 'hairpins', and a number of bracelets, medallions and rings. The 'tool/ weapons' category includes axes (socketed and unsocketed), daggers, and spears: these were almost certainly understood as weapons by those that deposited them, but have been kept in this category for consistency.

Tell Brak (Upper Mesopotamia)

Metalwork from Phase M, dated to the Akkadian period, has been considered here (Oates, et al. 2001). The assemblage derives mainly from the deliberate infilling of monumental buildings in areas SS and FS (Oates, et al. 2001: 233). Metal objects in these structured deposits were often grouped together, as hoards, which included both complete objects and scrap metal. The excavators, however, felt that the objects included in these deposits did follow a specific convention (Oates, et al. 2001: 235). Metal is also hoarded at Brak; Third Millennium hoards usually taking the form of groups of objects 'hidden' below floors, without containers. Unfortunately, there is a discrepancy between the numbers of objects in the catalogue (Oates, et al. 2001: 236-264, 569-581) and the totals provided in a summary in Table 21 (Oates, et al. 2001: 237). As the latter gives numeric totals to broad, undefined categories of artefacts, such as 'large tools', the artefacts numbers generated by the catalogue have been used instead. 'Fragments' and 'lumps' have been omitted, as have unidentified 'plates' and 'strips' of copper.

The assemblage at Brak is heavily dominated by nails, of which there are 93 dating to Phase M (Oates, et al. 2001: Table 21), but only 16 are catalogued. The catalogued objects are primarily composed of items of 'personal adornment' (39%), the majority of these are pins. 'Tools' and 'tool/ weapons' only account for 35% and 7% of the assemblage, respectively. The former almost exclusively awls, chisels and sickles, the latter including a single socketed axe, and five flat axes.

Susa (Elam)

Susa, part of Elam, is situated on the Mesopotamian plain rather than in the Iranian highlands typically associated with this culture, and during the period under consideration (Susa IV, c. EDIII- Akkadian periods) sees the first significant influence from Sumer, alongside contact with provinces further east, such as Shahdad, Tepe Yahya and the Indus (Tallon 1987: 54). Areas excavated from this period include the 'Acropole' and 'Ville Royale' (Tallon 1987: 30), and includes the 'Vase a la Cachette', a hoard interpreted as the concealment of metal for late recovery and use (Tallon 1987: 328-330). The way in which the original data was published creates difficulties for the dating of some objects, and did not always provide objects with an accurate provenance: a few from funerary contexts and ritual deposits are therefore likely to have been included in the data considered here. Artefacts given no date have been attributed to Susa IV only when others of the same type appear to date primarily or exclusively from that period.

Metalwork from Susa held by the Louvre is catalogued and described by Tallon (1987); it is a large assemblage, with roughly 533 artefacts dating to this period. 'Tool/ weapons' (41%) are more numerous than 'tools' (17%) at Susa. 'Personal adornment' comprises 18% of copper and bronze metalwork at the site, and is mainly composed of pins. 'Vessels' (10%) are more numerous at Susa than in any

other Near Eastern non-funerary assemblage, and 'toiletries' account for 5% of the metalwork. There are 'weapons' (2%) at Susa, represented by mace heads and war hammers.

Shahdad Cemetery A (Iran)

Both Cemetery A and Site D belong to the Takab III phase, c.2450- 1900 BC (Hakemi 1997: 75). Unfortunately, site D, the only non-funerary area excavated at Shahdad, a single block of five structures interpreted as a metalworking quarter (Hakemi 1997: 85-114; Pigott 1999: 89-90), is insufficiently published for inclusion.

Shahdad fits in well with the other funerary assemblages, demonstrating a clear trend towards 'vessels' (47%) and 'personal adornment' (35%). 'Vessels' at Shahdad are quite varied, encompassing spouted vessels, goblets, dishes, vases and bowls; and the majority of graves have at least one. By far the most common arrangement, in terms of metal grave goods, is a vessel and a pin (pins forming the vast majority of objects in 'personal adornment'). Also of note at Shahdad are a number of metal seals. Axes and daggers form the bulk of 'tool/ weapons' (8%) although the excavator sometimes labels socketed adzes as axes, and in the absence of illustrations of every example, the excavator's description has been adhered to. There is a single copper macehead from Shahdad, and a further two undecorated examples exist in lead.

Teppe Hissar (Iran)

Teppe Hissar is in northern Iran. The period under consideration here is Hissar III. Hissar IIIA is a transitional phase between IIB and IIIB, leaving scant material remains. Hissar IIIB, however, includes the 'Burned Building', apparently attacked and destroyed with the defendants still inside, and a number of hoards. The hoards have been interpreted as ritualistic in nature on the basis of their contents: one contained thirteen copper male figurines, a copper duck figurine, copper receptacles, 'conoid' pottery cups, braziers and small jars (Schmidt 1937: 193). Hissar IIIC was represented by somewhat ephemeral structures, contrasting with numerous rich burials which have provided much of the metalwork from this period.

Nearly half of the Hissar assemblage is composed of 'personal adornment' (46%); a fact that probably reflects the inclusion of grave goods. 'Tools' (5%) and 'tool/ weapons' (19%) are relatively uncommon, and this is probably due to the high amounts of 'art' (9%), 'vessels' (7%) and 'miscellaneous' (9%; mostly 'wands' and seals).

Kahun (Egypt)

Kahun is a Middle Kingdom worker's town, purpose-built c.1895BC to serve the pyramid at Lahun by Sesostri III. Activity at Kahun is therefore assumed to have been dominated and controlled by the state. The town is planned, rectilinear in shape, circumvallated, and with rows of blocks of worker's housing (Petrie 1890). However, there are also a number of larger houses or mansions, which would have housed the town and pyramid's officials and administrators; Kahun was not simply inhabited by manual workers. Metalwork from this site is therefore predominantly from domestic contexts, but very likely includes a number of objects from four sets of foundation deposits found under the valley temple next to the town. These included bronze model chisels, knives and a hatchet, copper ore, pottery vessels and baskets (David 1986: 103). The metalwork considered here comes from the collections of University College London and Manchester Museum.

The metal assemblage at Kahun is dominated by 'tools' (59%), mostly needles. 'Tool/ weapons' is another significant category (14%), comprised of knives and a couple of axes, as is 'miscellaneous' (16%), made large here by the foundation deposit models. A small amount of copper ore ('manufacturing': 6%) suggests that smelting may have taken place at or nearby Kahun.

Gurob (Egypt)

Gurob is situated near the Bahr Yusef, 25Km west of the Nile, at the mouth of the Fayum. The town appears to have been founded by Thuthmosis III, and was inhabited until at least the reign of Ramesses V (a period spanning c.1479- 1143 BC). Although there are traces of earlier settlement, the town only gained real significance in the New Kingdom, when the royal harem was moved from Re-hone (el-Lahun) to Mi-wer (Gurob), and the temple was established (Thomas 1981: 4). The harem was an important institution at Gurob, and would involve a whole supporting network of officials, administrators, artisans, workmen, servants and their families. This was not simply a town of artisans, as interpreted by Bruyère (Thomas 1981: 5). The resulting town probably became an important center for the entire region, and whilst not as tightly controlled as the state-run worker's towns at Kahun, the state (in the form of the temple, harem and Pharaoh's holdings) still provided much of the work. Unfortunately, the excavators did not always record the exact provenance of objects; and some may derive from tombs (David 1986: 91). David (1986: 93) has observed that there is a complete change in tools at 18th Dynasty Gurob compared to 12th Dynasty Kahun. In the Middle Kingdom stone tools were common and sometimes predominated. Metal tools often copied the design of their stone counterparts. In the New Kingdom metal became more common, bronze was used more frequently, and flaked stone tools become rare and less skillfully knapped. The source of data for Gurob's metalwork is the catalogue in a re-study of the site by Thomas (1981).

At Gurob 'tools' (57%) and 'tool/ weapons' predominate (22%). The latter category contains a number of knives most likely linked to craft uses than serving violent purposes. The 'tools' at Gurob (almost exclusively fishhooks, needles and punches) suggest the manufacture and repair of fishing nets. The high number of needles may also reflect the association between the harem and textile manufacture (David 1986: 94). 'Toiletry' items are more common at Gurob than any other site (18%), especially considering that the next nearest is from the 'A' cemetery at Kish (9%), where razors and toilet sets form a common part of standardized grave goods. 'Toiletry' at Gurob consists of kohl sticks, hair curlers, tweezers and razors. David (1986: 95-96) suggests that this may be due to the inclusion of a limited number of 19th Dynasty graves in the assemblage as much as the sophisticated lifestyle of the inhabitants at Gurob.

Mohenjo Daro (Indus)

Although archaeological work was conducted at Mohenjo Daro in the second half of the Twentieth Century (Dales' excavations west of the HR area on the lower mound, Jansen's restudy of the 'Moneer' Area and the wider Aachen/IsMEO survey projects), none of this has been comprehensively published. Our understanding of Mohenjo Daro therefore still relies on the earliest excavations at the site (Mackay 1938; Marshall 1931), and metalwork is no exception. Elements of Mackay's essay on metalwork in Marshall's report on the first seasons at Mohenjo Daro (Marshall 1931) has provided the basic model for nearly all subsequent work on Harappan metalwork. Mohenjo Daro is the largest known Indus site, the most extensively

excavated, and it has correspondingly produced more published metalwork than any other Indus site.

Mohenjo Daro has quite a varied metalwork assemblage, and unlike most sites has examples of every object category. The bulk of the assemblage is composed of 'tools' (21%) and 'tool/ weapons' (30%). The composition of both categories is varied, the most common objects being chisels, and axes and knives (adhering to the excavator's definitions: there is little if anything to distinguish Indus knives from spears or daggers), respectively. 'Personal adornment' (14%) is the next largest category, despite probably being appreciably under-represented by the excavators (see above). 'Miscellaneous' (12%) constitutes the third most numerous group at Mohenjo Daro, and this is due to the inclusion of numerous inscribed tablets which are unique to the site. 'Vessels' are also well represented; at 11% of the overall assemblage they are more comparable (in terms of popularity) to Mesopotamian funerary assemblages than domestic assemblages. Lower proportions of 'toiletory' items (6%), mainly razors, and are found, along small numbers of 'art', 'weapons' and 'manufacturing'.

Harappa (Indus)

48% of the metalwork from Harappa listed by Vats (1940) came from one hoard, in Jar 227. This contained thirteen axes, eight adzes, two double axes, eleven daggers, one macehead, thirteen spears, one lancehead, one arrow, one chopper, two saws, ten chisels, fourteen cast strips, one stylus, one scale-beam, one terminal, eight bangles and one bowl. The usual interpretation of such hoards is that they represent items being stored by craftsmen or merchants, either for storage or reworking (Agrawal 2000: 73). It is uncertain how this should affect the interpretation of the overall assemblage: the objects' inclusion in the hoard has after all insured their preservation, and over-represented 'tool/weapons' at the site. Whether it simply reflects, for whatever reason, a biased collection of blades and axes or, rather, a real predominance of these objects in Third Millennium Harappa is unclear. However, the composition of the Chanhudaro and Mohenjo Daro assemblages are comparable, and suggest that Harappa's is not grossly biased by the hoard.

The assemblage at Harappa is similar to that of Mohenjo Daro: mostly 'tools' (17%) and 'tool/ weapons' (47%), with a proportion of 'vessels' (5%) higher than any non-Indus domestic assemblage. Harappa has a high proportion of 'manufacturing' oriented objects (6%), such as the 'cast bars' and 'flat strips' found in Jar 227 which appear to be bangles in different stages of manufacture. 'Weapons' are represented by a solitary macehead, and 'art' by a single figurine of a male sat on a chariot or wagon.

Chanhudaro (Indus)

Chanhudaro was excavated by (Mackay 1943). Like most Indus sites, only a selection of artefacts was published. Fortunately, Miller (2000) has restudied as much of the Chanhudaro metalwork as she could trace, to create a functional typology. The numbers generated from this typology (Miller 2000; Miller pers. comm.) have been converted into the categories employed here, so that the proportions discussed from Chanhudaro can be said to be more reflective of the original archaeological record than at most Indus sites (excepting Kuntasi and Shortughai which are published in full).

The Chanhudaro metalwork follows the same broad patterns as Mohenjo Daro and Harappa, but with less overall variety; primarily 'tools' (30%) and 'tool/ weapons' (23%); with a high number of 'vessels' (10%) compared to Near Eastern, Iranian and Egyptian sites. Nearly a third (31%) of the metalwork at Chanhudaro is 'personal adornment', in this instance beads, coils, bangles and pins. The remainder of the

metalwork is composed of 'manufacturing' (2%), 'toiletry' (%) and 'miscellaneous' (4%; scale-pans and scale-beams).

Lothal (Indus)

Due to issues surrounding selective publication discussed above, the data considered at Lothal is based on the author's work at the site museum, rather than the publication (Rao 1985). Lothal is chronologically divided into two periods, A and B, corresponding to Mature Harappan (urban) and Late Harappan (post-urban) periods respectively. However, neither the site report nor the finds register at the museum consistently assign a period to discussed artefacts; both periods must therefore be considered together.

The majority of Lothal's metalwork falls into four categories; 'personal adornment' (43%), 'manufacturing' (18%), 'tools' (17%) and 'tool/ weapons' (15%). Lothal also has a high proportion of 'art' compared to other Indus sites (3%), in the form of a number of animal figurines. A number of 'miscellaneous' items (2%) include a seal.

Shortughai (Indus)

Shortughai is an isolated Harappan site, situated near the Oxus River in northern Afghanistan (Francfort 1989). The site has been linked to the commercial acquisition of tin and lapis lazuli from the region and is generally viewed as a trading post (Chakrabarti 1988). The occupation of Shortughai is divided into four ceramic phases, supported by other artefactual evidence. Phases I and II have predominantly Harappan artefacts, and although this material persists into phases III and IV, the site has stronger cultural ties with Central Asia during this period. The site has yielded 56 copper and bronze artefacts, but only the artefacts from Mature Harappan levels have been considered here: numbering only 28.

Shortughai bucks the trend for 'tools' and 'tool/ weapons' to dominate the metalwork at Indus sites; here there are no 'tool/ weapons' and 'tools' make up 36% of the total assemblage, compared to 42% 'personal adornment'. The remaining fifth of the assemblage is 'manufacturing' (13%) and 'toiletry' (7%). It is highly likely that the small sample-size has misrepresented or over-represented certain elements of metalwork at this site.

Kuntasi (Indus)

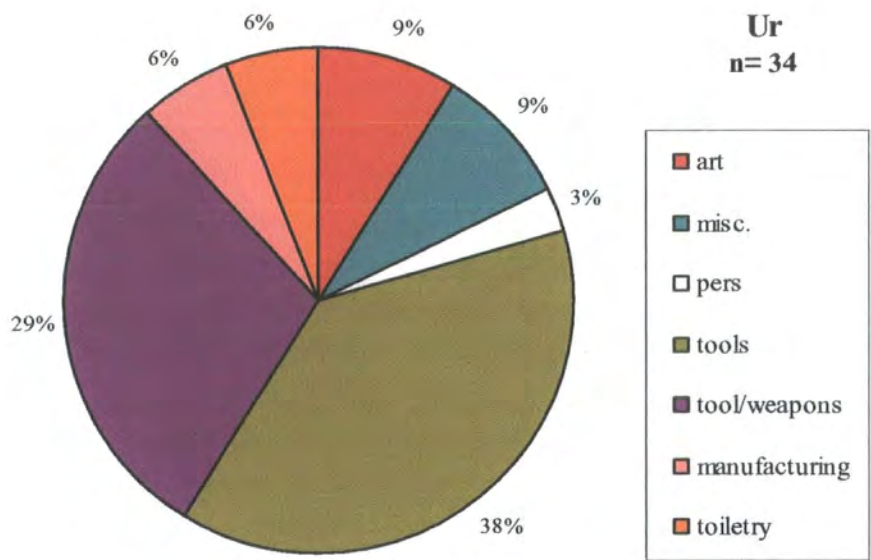
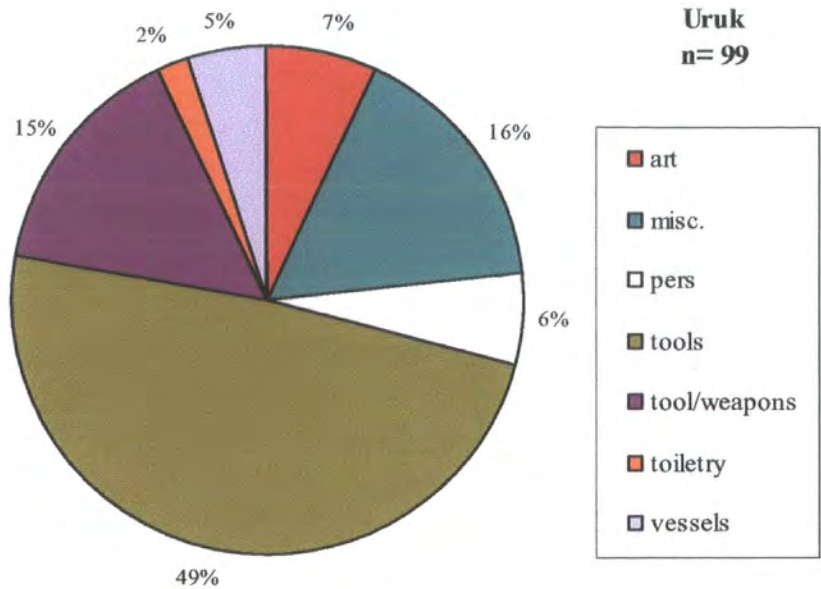
Kuntasi is a small site, roughly 3.3 ha in size, on the northern coast of the Saurashtran peninsula. It was interpreted by its excavators as an emporium (Dhavalikar, et al. 1996). Excavations at Kuntasi, like Shortughai, did not produce much metalwork- only 72 objects. 24 of these were bangles, and 'personal adornment' consequently makes up 62% of the metalwork at this site. 'Tools' (13%) and 'tools/ weapons' (19%) make up the bulk of the remainder, with limited evidence for 'manufacturing' (4%) and 'toiletry' items (1%).

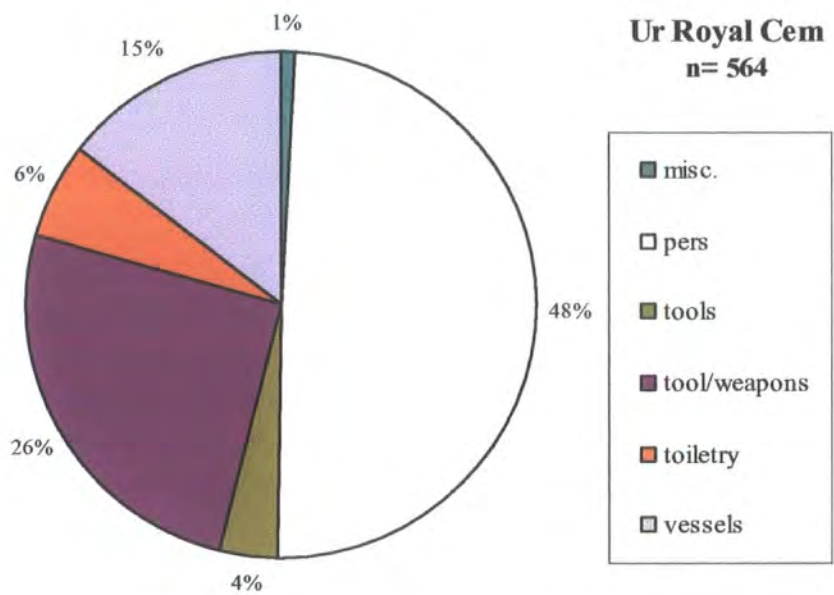
Surkotada (Indus)

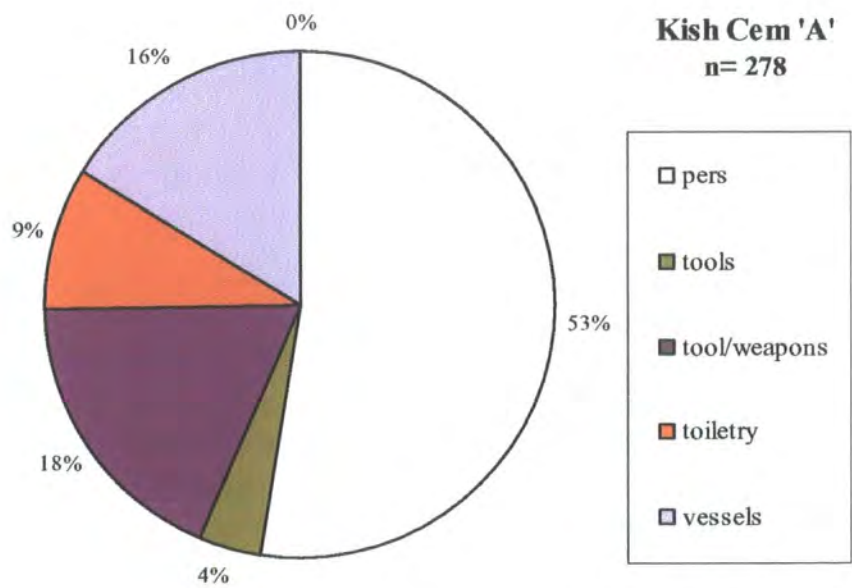
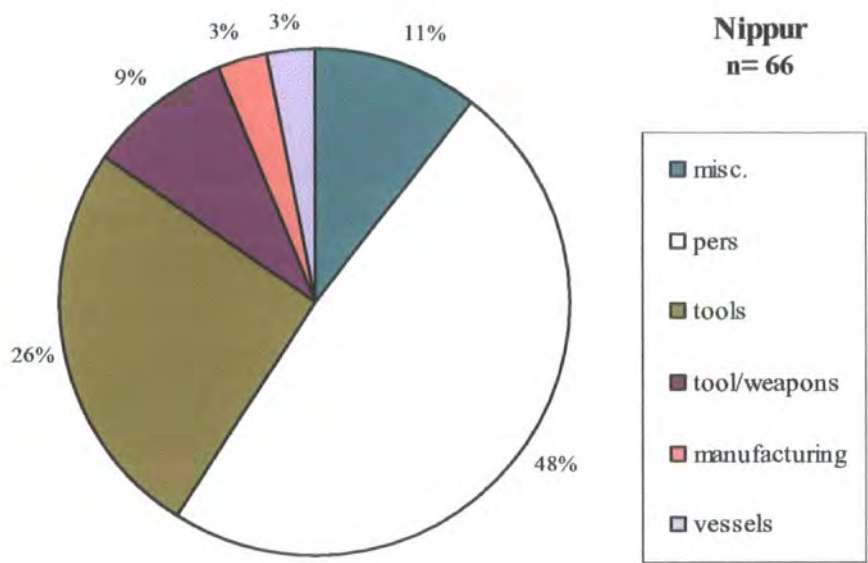
Surkotada is a small (1.4 ha) site in Kutch, northern Gujarat (Joshi 1990). Radiocarbon dates suggest the site was occupied between 2300BC and 1700BC, in a continuous 'Harappan' occupation. The site is rectilinear, divided in two by an internal wall, and surrounded by a stone rampart with bastions at the corners. The only discovered gateway is small but defensively re-curved, and the site appears to be a fort or, at least, a fortified site. 129 copper-based artefacts were retrieved from Surkotada, of

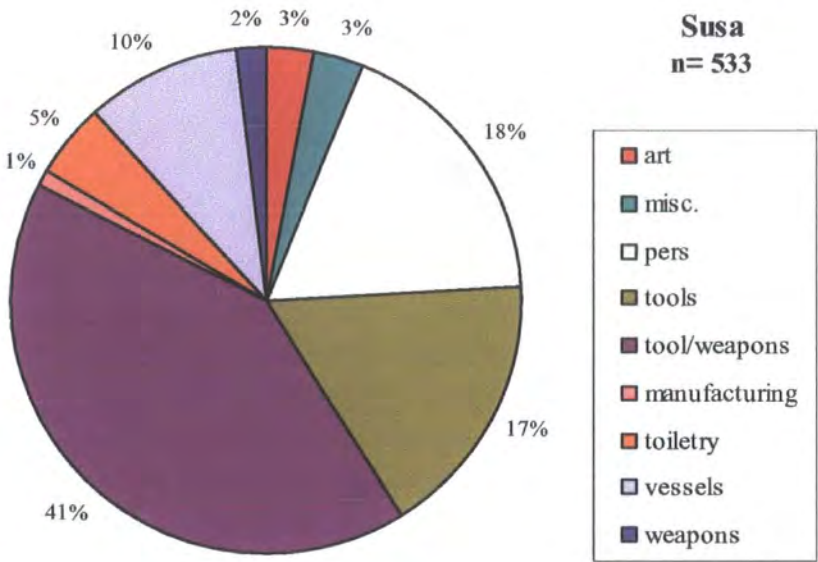
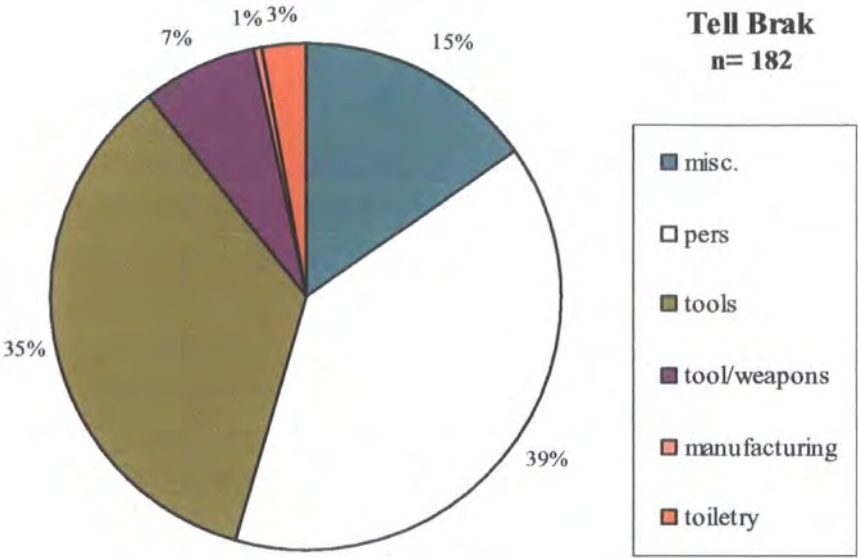
which 60 (52%) were indeterminate pieces and lumps (Joshi 1990: 266). There was also a hoard of copper beads found at the site (which turned up 10 hoards of beads in all), but these were fused together and could not be quantified, although the published photo suggests they number in the hundreds (Joshi 1990: 314). Neither the beads nor the 60 unidentifiable pieces have been included.

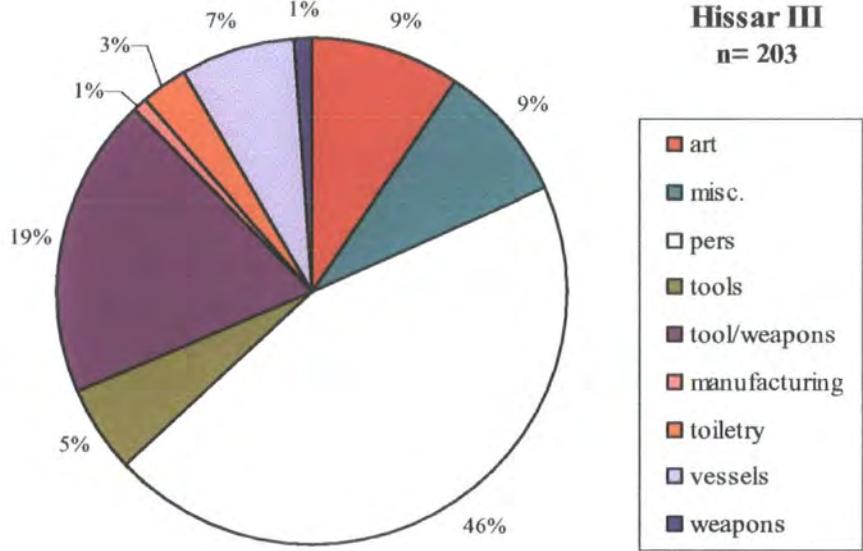
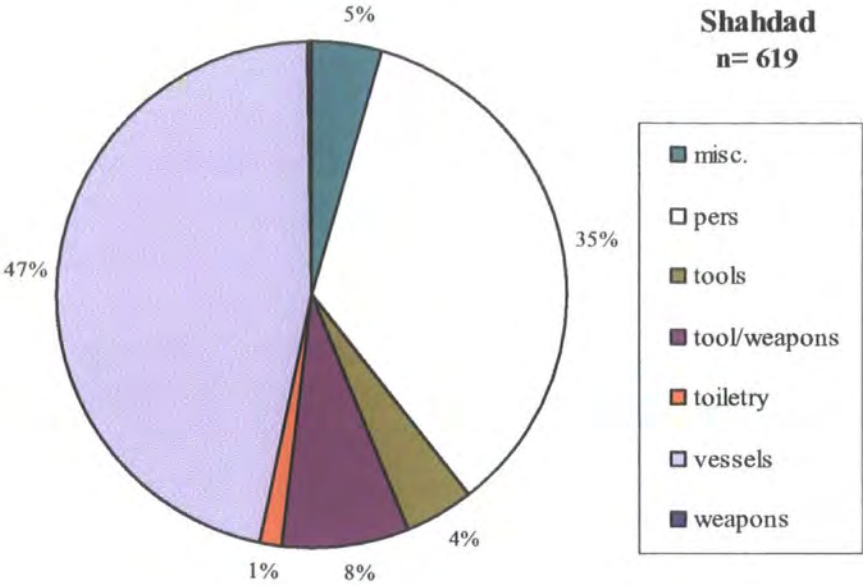
'Personal adornment' is already well represented at the site (62%), if the hoarded beads were added this category would comprise the majority of copper artefacts found at Surkotada. 'Tools' and 'tool/ weapons' comprise 11% and 15% of the metalwork, respectively, and 7 indeterminate rods contribute towards a 'manufacturing' category of 11%.

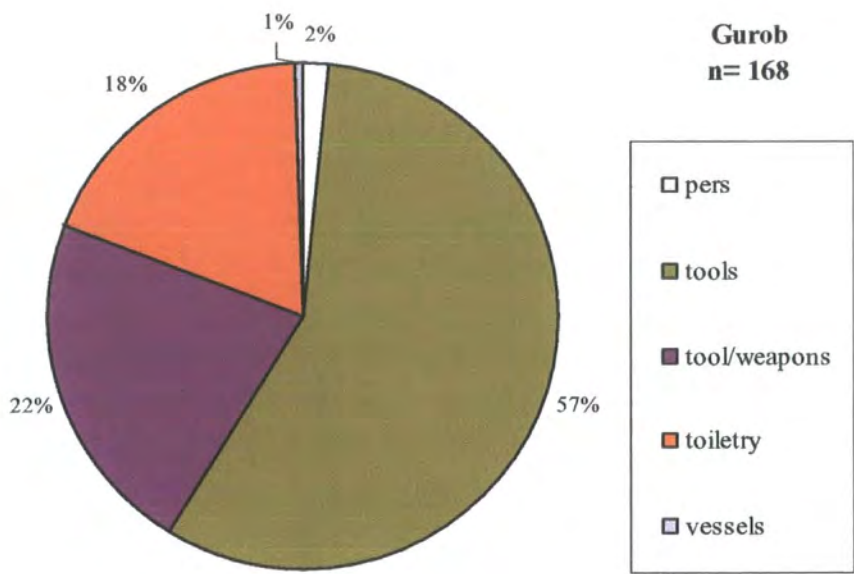
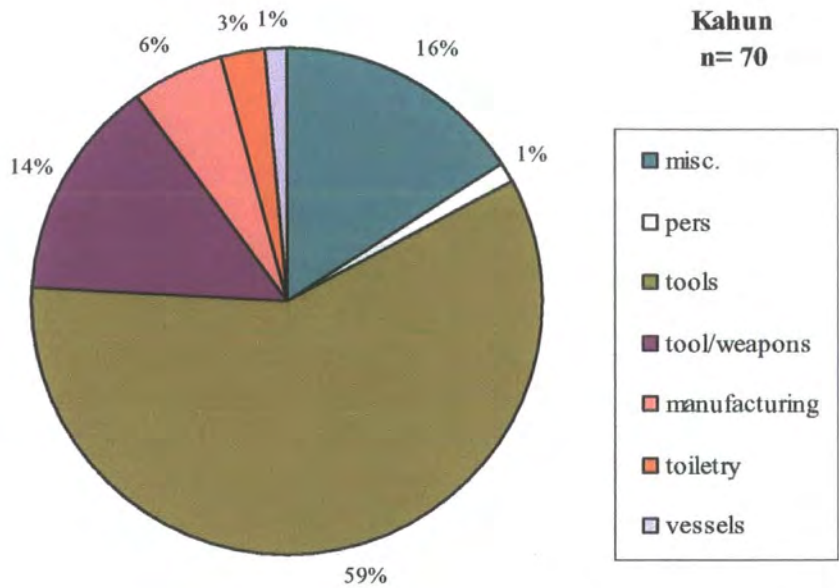


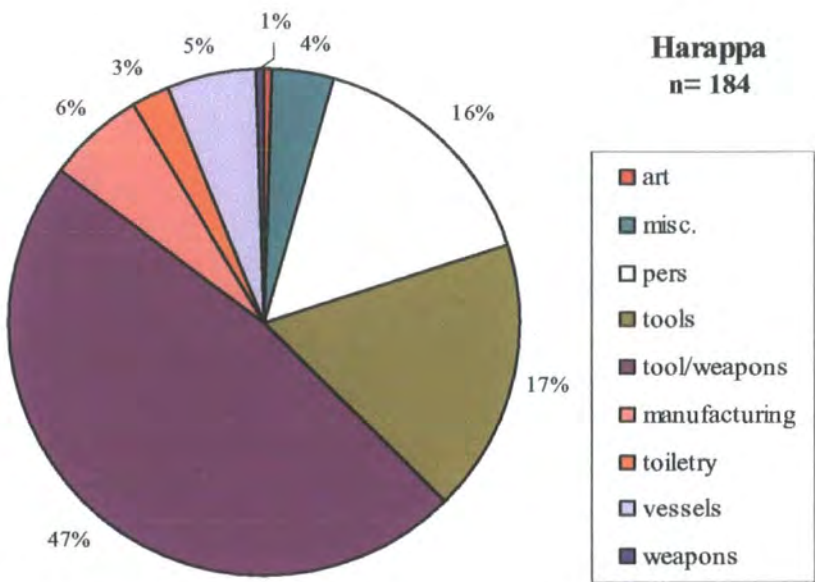
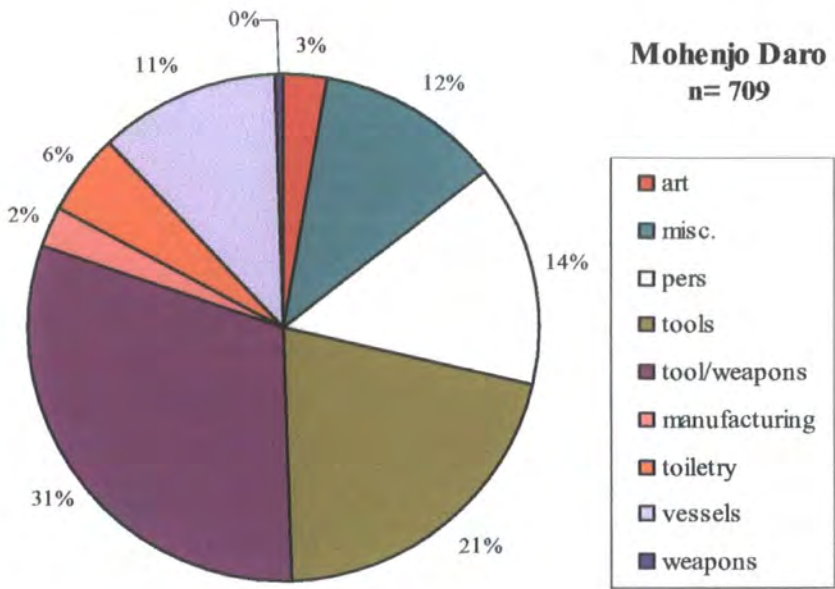


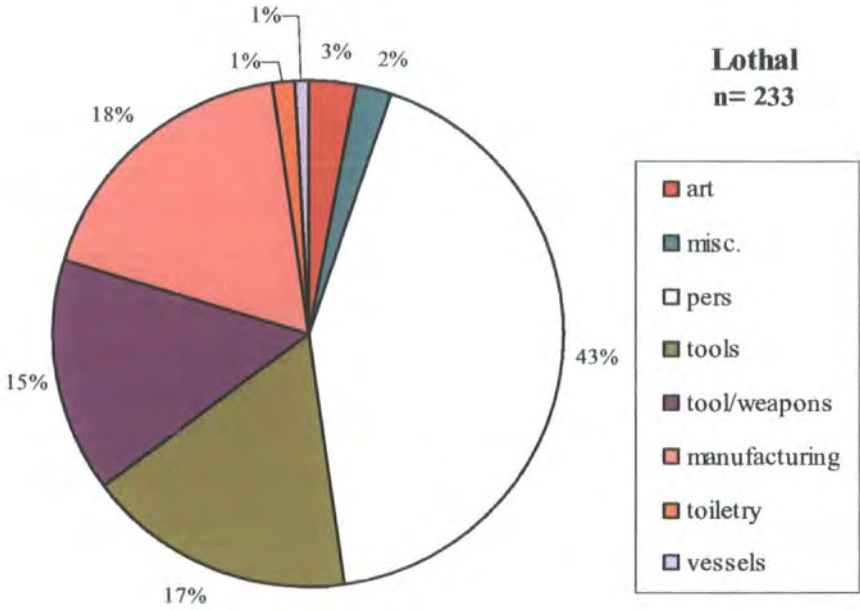
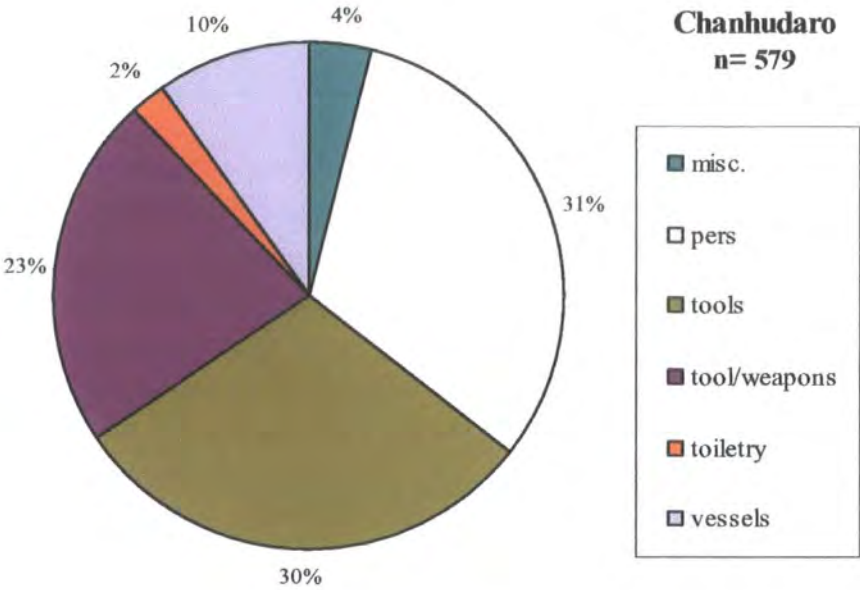


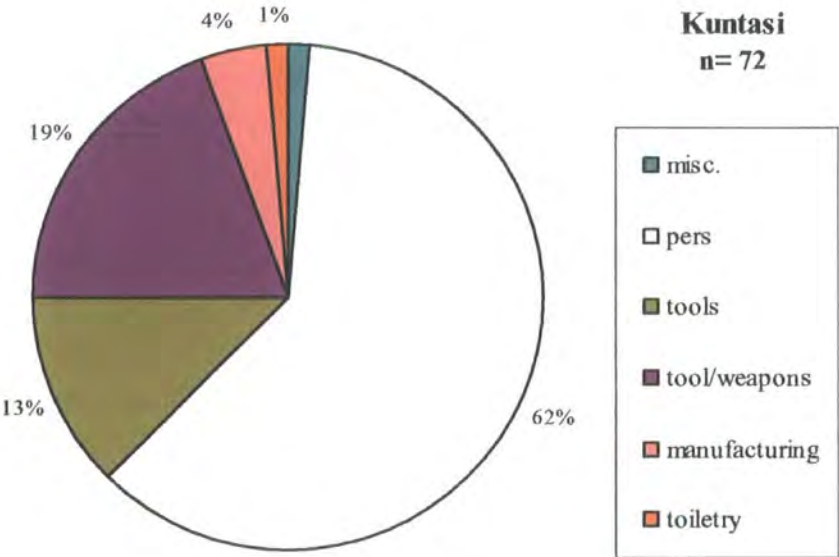
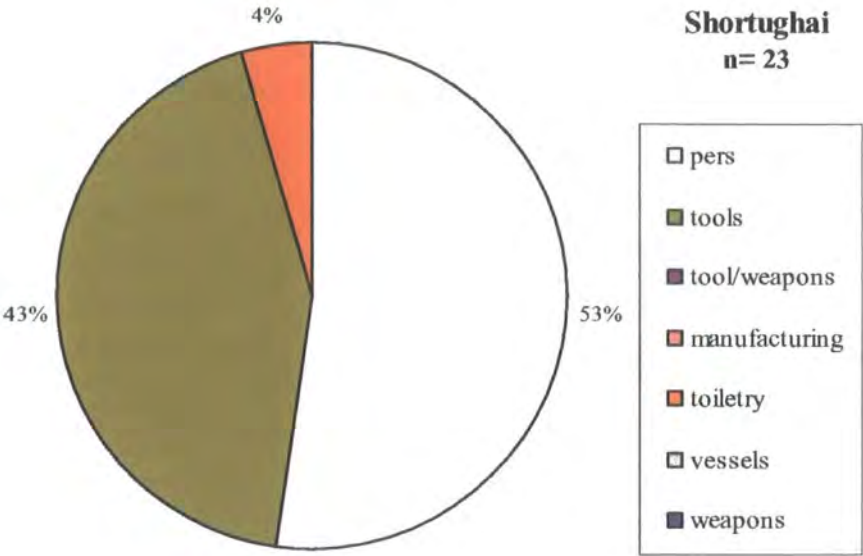


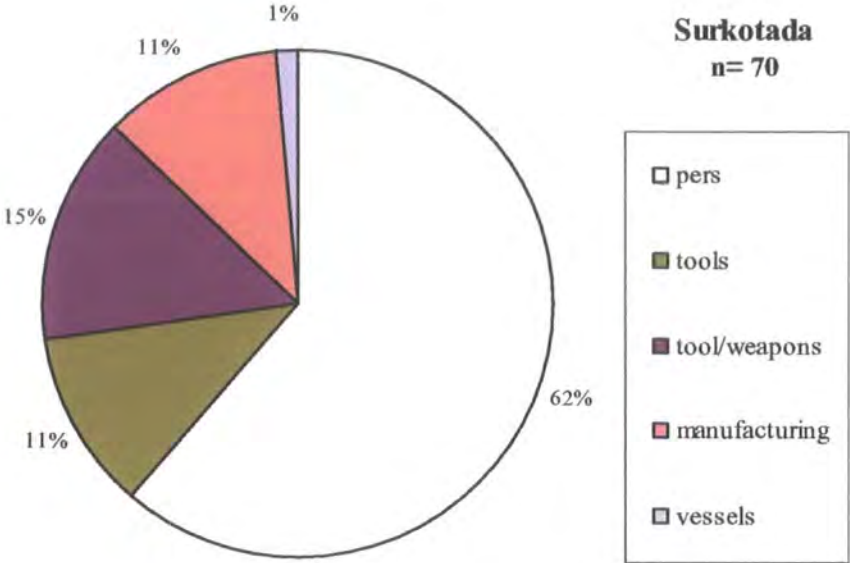












Appendix F: Elemental Composition Data Used In Chapter 4.

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Harappa	H88/ 444-1	mirror	Kenoyer and Miller 1999	77.2	0.038	0.93	0.5	
Harappa	H88/ 346-27	bead	Kenoyer and Miller 1999	85.3	12.7	0.59	0.27	
Harappa	H88/ 751-21	spearhead	Kenoyer and Miller 1999	93.4	2.6	1.91	0.17	
Harappa	H88/ 529-120	rod	Kenoyer and Miller 1999	93.7	0.015	4.71	0.051	
Harappa	H86.a	rod	Kenoyer and Miller 1999	96.4	0.018	2.26	0.39	
Harappa	H86.c	rod	Kenoyer and Miller 1999	96.5	0.014	2.08	0.32	
Harappa	H97/ 515	scoop	Kenoyer and Miller 1999	96.7	0.014	1.17	0.65	
Harappa	H88/ 325/08E	rod	Kenoyer and Miller 1999	97	0.021	1.95	0.19	
Harappa	H88/ 325/08D	rod	Kenoyer and Miller 1999	97	0.024	1.86	0.17	
Harappa	H88/ 761-1b	needle (point)	Kenoyer and Miller 1999	97.2	0.013	1.95	0.015	
Harappa	H88/ 761-1a	needle (eye)	Kenoyer and Miller 1999	97.4	0.011	1.91	0.017	
Harappa	Lot 227	folded sheet	Kenoyer and Miller 1999	97.69	0.15	1.19	0.85	
Harappa	H88/ 374-1	hook	Kenoyer and Miller 1999	98.6	0.013	0.57	0.032	
Harappa	Lot 277e/ 2	lancehead	Kenoyer and Miller 1999	98.69	0.1	0.68	0.01	
Harappa	H88/ 413-A	ring	Kenoyer and Miller 1999	99.4	0.015	0.01	0.016	
Harappa	X	chisel	Vats 1940	87.42	10.45	1.1	0.52	
Harappa	Af150	awl	Vats 1940	88.38	9.16	0.4	0.1	
Harappa	-	dagger	Vats 1940	90.05	0	6.58	2.8	
Harappa	1208	dagger	Vats 1940	91	6.76	0.04	0.88	
Harappa	Lot 227a/ 21	celt	Vats 1940	91.1	7.85	0.42	0.01	
Harappa	4255	dagger	Vats 1940	91.87	6.42	0.26	0.98	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Harappa	11859	needle	Vats 1940	92.55	0.29	2.96	3.72	
Harappa	B1754	chisel	Vats 1940	92.61	6.43	0.36	0.01	
Harappa	Lot 227k/ 3	chisel	Vats 1940	94.92	3.6	0.6	0.2	
Harappa	5133	rod	Vats 1940	97.2	0.84	0.7	0	
Harappa	J125	spearhead	Vats 1940	97.66	0.33	0.06	0.7	
Harappa	Lot277g/ 2	saw	Vats 1940	98.12	0.33	0.65	0.1	
Harappa	Lot 227a/ 2	celt	Vats 1940	98.37	0	1.4	0.11	
Lothal	15217	spearhead	Kenoyer and Miller 1999	39.07	2.27	0	0	
Lothal	-	jar	Kenoyer and Miller 1999	43	0	0	0	
Lothal		lump	Kenoyer and Miller 1999	43.1	0	0	0	
Lothal	14211	spearhead	Kenoyer and Miller 1999	43.38	0	0	0	
Lothal	15176	knife	Kenoyer and Miller 1999	46.57	0	0	0	
Lothal	15139	ear ornament	Kenoyer and Miller 1999	48.24	0.01	0	0.01	
Lothal	8480	spearhead	Kenoyer and Miller 1999	48.26	0	0	0	
Lothal	15079	engraver	Kenoyer and Miller 1999	49.64	3.96	0	0	
Lothal	15155	pin	Kenoyer and Miller 1999	51.89	13.8	0	0	
Lothal	15030	mirror	Kenoyer and Miller 1999	54.78	5.47	0	0	
Lothal	15209	bangle	Kenoyer and Miller 1999	55.32	11.82	0	0	
Lothal	15251	lump	Kenoyer and Miller 1999	57.68	0	0	0	
Lothal	13886	rod	Kenoyer and Miller 1999	57.75	9.02	0	0	
Lothal	13134	pin	Kenoyer and Miller 1999	57.76	0	0	0	
Lothal	14855	ring	Kenoyer and Miller 1999	58.36	0	0	0	from burial
Lothal	10842	dagger/ chisel	Kenoyer and Miller 1999	59.64	0	0	0	
Lothal	15137	rod	Kenoyer and Miller 1999	60.3	0.01	0	0	
Lothal	5578	fish-hook	Kenoyer and Miller 1999	60.65	0	0	1.3	
Lothal	14841	ornament	Kenoyer and Miller 1999	63.58	0	0	0	
Lothal	12378	axe	Kenoyer and Miller 1999	70	0	0	0	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Lothal	3872	arrowhead	Kenoyer and Miller 1999	70.3	0	0	0	
Lothal	15210	engraver	Kenoyer and Miller 1999	70.45	0	0	0	
Lothal	12264	bangle	Kenoyer and Miller 1999	72.26	0	0	0	
Lothal	15196	lump	Kenoyer and Miller 1999	72.83	0	0	0	
Lothal	5971	bangle	Kenoyer and Miller 1999	72.95	0	0	0	
Lothal	11893	chisel	Kenoyer and Miller 1999	74.28	0	0	0	
Lothal	12143	bangle	Kenoyer and Miller 1999	74.34	11.2	0	0	
Lothal	15208	pin	Kenoyer and Miller 1999	77.4	0	0	0	
Lothal	14302	hook	Kenoyer and Miller 1999	77.44	0	0	0	
Lothal	15194	lump	Kenoyer and Miller 1999	81.07	0	0	0	
Lothal	15063	fish-hook	Kenoyer and Miller 1999	82.9	0	0	0	
Lothal	11971	figurine	Kenoyer and Miller 1999	83.31	0	0	0	
Lothal	15036	lump	Kenoyer and Miller 1999	83.9	0	0	0	
Lothal	5373	spearhead	Kenoyer and Miller 1999	87.34	0	0	0	
Lothal	13140	hook	Kenoyer and Miller 1999	87.34	0	0	0	
Lothal	3091	axe	Kenoyer and Miller 1999	88.27	9.62	0	0	
Lothal	8110	chisel	Kenoyer and Miller 1999	88.53	0	0	0	
Lothal	5501	rod	Kenoyer and Miller 1999	88.6	0	0	0	
Lothal	12455	pin	Kenoyer and Miller 1999	89.95	0	0	0	
Lothal	7700	chisel	Kenoyer and Miller 1999	90.44	0	0	0	
Lothal	12125	lump	Kenoyer and Miller 1999	90.68	0	0	0	
Lothal	6030	pin	Kenoyer and Miller 1999	90.75	0	0	0	
Lothal	SRG-324	fish-hook	Kenoyer and Miller 1999	91.6	0	0	0	
Lothal	SRG-B (20)	axe	Kenoyer and Miller 1999	91.87	0	0	0	
Lothal	4813	lump	Kenoyer and Miller 1999	93.65	0	0	1.51	
Lothal	3091	axe	Kenoyer and Miller 1999	94.33	0	0	0	
Lothal	1344	bangle	Kenoyer and Miller 1999	94.9	0	0	0	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Lothal	4744	ring	Kenoyer and Miller 1999	95.31	0	0	0	
Lothal	10918	axe	Kenoyer and Miller 1999	96.27	0	0	2.51	
Lothal	15295	pin	Kenoyer and Miller 1999	96.76	0.57	0	0	
Lothal	5957	axe	Kenoyer and Miller 1999	97.18	0.01	0	0	
Lothal	12147	arrowhead	Kenoyer and Miller 1999	97.21	0	0	0	
Lothal	625	arrowhead	Kenoyer and Miller 1999	97.7	0	0	0	
Lothal	6040	fish-hook	Kenoyer and Miller 1999	99.01	0	0	0	
Lothal	14535	ingot	Kenoyer and Miller 1999	99.81	0	0	0	
Mohenjodaro	DK7856	chisel	Mackay 1838	75.25	7.84	0	0.39	
Mohenjodaro	DK5486	axe	Mackay 1838	80.56	1.76	2.1	0.2	
Mohenjodaro	DK5360	pan	Mackay 1838	81.94	0.37	0.8	0.05	
Mohenjodaro	DK6043	chisel	Mackay 1838	86.92	8.56	1.58	0.01	
Mohenjodaro	DK7861	axe	Mackay 1838	88.49	9.88	0	0.22	
Mohenjodaro	DK7854	axe	Mackay 1838	90.18	7.66	0	0.95	
Mohenjodaro	DK7535	axe	Mackay 1838	91.01	6.14	0.66	0.59	
Mohenjodaro	DK7853	axe	Mackay 1838	94.64	0.31	0.4	0.71	
Mohenjodaro	DK7859	spear/knife	Mackay 1838	95.23	0	0.24	0.82	
Mohenjodaro	DK7343	chisel	Mackay 1838	97.23	0	0.24	0.81	
Mohenjodaro	n/a	slab	Marshall 1931	82.71	13.21	1.17	0.11	
Mohenjodaro	n/a	lump	Marshall 1931	83.92	12.13	0.07	0.17	
Mohenjodaro	n/a	chisel	Marshall 1931	85.37	11.09	0	0.01	
Mohenjodaro	n/a	chisel	Marshall 1931	86.22	12.38	0	0.07	
Mohenjodaro	n/a	button	Marshall 1931	88.05	8.22	0.01	0	
Mohenjodaro	n/a	rod	Marshall 1931	91.9	4.51	1.96	0.17	
Mohenjodaro	n/a	chisel	Marshall 1931	92.41	0	3.42	3.28	
Mohenjodaro	n/a	lump	Marshall 1931	92.49	0.37	1.3	0.01	
Mohenjodaro	n/a	celt	Marshall 1931	94.76	0.09	4.42	0.26	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Mohenjodaro	n/a	lump	Marshall 1931	96.42	0	0	0.09	
Mohenjodaro	n/a	lump	Marshall 1931	96.67	0	0.15	0.02	
Mohenjodaro	n/a	lump	Marshall 1931	97.07	0	0.98	0.01	
Mohenjodaro	Pit DK5316?	copper ore	Kenoyer and Miller 1999	76.15	0	0.37	0.01	
Nagwada	n/a	chisel	Chakrabarti & Lahiri 1996	85.64	10.62	0	3.2	
Nagwada	n/a	axe	Chakrabarti & Lahiri 1996	96	0	2.72	0.69	
Rangpur	RP 169	bangle	Chakrabarti & Lahiri 1996	57.7	6.94	0	0	
Rangpur	RP 526	knife	Chakrabarti & Lahiri 1996	59	5.28	0	0	
Rangpur	RP 525	knife	Chakrabarti & Lahiri 1996	59.6	2.69	0	0	
Rangpur	RP 141	pin	Chakrabarti & Lahiri 1996	65.4	6.78	0	0	
Rangpur	RP 170	amulet	Chakrabarti & Lahiri 1996	77.6	0.01	0	0	
Rangpur	RP 437	bangle	Chakrabarti & Lahiri 1996	86.4	11.07	0.01	0.01	
Rangpur	RP 324	celt	Chakrabarti & Lahiri 1996	91.2	2.6	0	0.01	
Rangpur	RP 663	celt	Chakrabarti & Lahiri 1996	91.35	4.09	0.01	0.01	
Rangpur	n/a	pin	Chakrabarti & Lahiri 1996	91.8	0.6	0	0	
Rangpur	RP 417	knife	Chakrabarti & Lahiri 1996	94.8	0.7	0	0	
Rangpur	RP 635	ring	Chakrabarti & Lahiri 1996	96.1	0.01	0	0	
Rangpur	RP 442	pin	Chakrabarti & Lahiri 1996	96.6	0	0	0	
Rangpur	RP 260	bead	Chakrabarti & Lahiri 1996	96.66	0.01	1.4	0.38	
Susa	1	socketed axe	Malfoy and Menu 1987	98	0.004	0.283	1.14	
Susa	2	socketed axe	Malfoy and Menu 1987	98.4	0.02	0.43	0.2	
Susa	4	socketed axe	Malfoy and Menu 1987	97.2	0.81	1	0.2	
Susa	5	socketed axe	Malfoy and Menu 1987	97.8	0.1	0.8	0.22	
Susa	6	socketed axe	Malfoy and Menu 1987	97.9	0.02	1.2	0.2	
Susa	8	socketed axe	Malfoy and Menu 1987	96.7	0.16	0.166	0.13	
Susa	9	socketed axe	Malfoy and Menu 1987	94.6	0.009	3.19	0.82	
Susa	10	socketed axe	Malfoy and Menu 1987	99.7	0.005	0.036	0.021	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	11	socketed axe	Malfoy and Menu 1987	98.535	0.005	0.49	0.151	
Susa	12	socketed axe	Malfoy and Menu 1987	98.28	0.01	0.9	0.2	
Susa	13	socketed axe	Malfoy and Menu 1987	98.739	0.012	0.566	0.216	
Susa	14	socketed axe	Malfoy and Menu 1987	97.2	0.045	1.18	0.18	
Susa	15	socketed axe	Malfoy and Menu 1987	95.44	0.01	1.7	0.2	
Susa	16	socketed axe	Malfoy and Menu 1987	97.253	0.004	1.78	0.088	
Susa	19	socketed axe	Malfoy and Menu 1987	97.433	0.03	1.21	0.234	
Susa	40	socketed axe	Malfoy and Menu 1987	85.7	8.4	1.5	2.7	
Susa	92	folded socket axe	Malfoy and Menu 1987	98.22	0.01	0.61	0.2	
Susa	103	dagger	Malfoy and Menu 1987	96.29	0.05	0.05	0.5	
Susa	106	dagger	Malfoy and Menu 1987	95.81	0.27	1.5	0.21	
Susa	110	dagger	Malfoy and Menu 1987	91.59	0.17	2.7	0.21	
Susa	112	dagger	Malfoy and Menu 1987	97.43	0.05	0.9	0.5	
Susa	113	dagger	Malfoy and Menu 1987	96.72	0.03	2.2	0.33	
Susa	115	dagger	Malfoy and Menu 1987	95.68	0.03	2.9	0.2	
Susa	117	dagger	Malfoy and Menu 1987	90.81	0.2	4	0.7	
Susa	119	dagger	Malfoy and Menu 1987	94.2	0.04	3.1	0.2	
Susa	120	dagger	Malfoy and Menu 1987	93	0.2	4.9	0.2	
Susa	123	dagger	Malfoy and Menu 1987	90.15	0.05	3.6	0.31	
Susa	125	dagger	Malfoy and Menu 1987	93.39	0.38	3.1	0.54	
Susa	126	dagger	Malfoy and Menu 1987	91.8	0.05	2.3	0.2	
Susa	127	dagger	Malfoy and Menu 1987	92.17	0.18	2.6	0.49	
Susa	128	dagger	Malfoy and Menu 1987	95.11	0.05	3	0.3	
Susa	138	dagger	Malfoy and Menu 1987	96.3	0.03	1.3	0.2	
Susa	139	dagger	Malfoy and Menu 1987	96.09	0.23	0.03	0.2	
Susa	164	dagger	Malfoy and Menu 1987	97.89	0	1.1	0	
Susa	170	dagger	Malfoy and Menu 1987	96.82	0.24	1	0.2	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	171	dagger	Malfoy and Menu 1987	78	15.3	2.4	0.59	
Susa	172	dagger	Malfoy and Menu 1987	78.93	6.2	4	0.39	
Susa	173	dagger	Malfoy and Menu 1987	85.94	8.3	1.9	0.2	
Susa	174	dagger	Malfoy and Menu 1987	90.053	9.2	0.273	0.07	
Susa	175	dagger	Malfoy and Menu 1987	89.607	8.8	0.596	0.223	
Susa	178	dagger	Malfoy and Menu 1987	84.92	0.07	5.1	5.4	
Susa	186	macehead	Malfoy and Menu 1987	97.41	0.03	1.7	0.4	
Susa	187	macehead	Malfoy and Menu 1987	73.15	21.8	1.4	0.7	
Susa	189	war-hammer	Malfoy and Menu 1987	85.43	12.5	1.2	0.3	
Susa	201	spearhead	Malfoy and Menu 1987	85.04	12.7	0.57	0.28	
Susa	203	spearhead	Malfoy and Menu 1987	95.3	0.29	1.5	0.55	
Susa	207	spearhead	Malfoy and Menu 1987	96.95	0.03	1.2	0.3	
Susa	210	spearhead	Malfoy and Menu 1987	96.059	0.035	1.89	0.543	
Susa	212	spearhead	Malfoy and Menu 1987	97.219	0.097	1.01	0.037	
Susa	213	spearhead	Malfoy and Menu 1987	97.811	0.051	1.23	0.121	
Susa	307	pointe bifide	Malfoy and Menu 1987	94.11	0.24	2.7	0.4	
Susa	323	pointe bifide	Malfoy and Menu 1987	96.26	0.06	1.6	0.3	
Susa	329	pointe bifide	Malfoy and Menu 1987	95.181	0.001	4.4	0.003	
Susa	330	pointe bifide	Malfoy and Menu 1987	96.874	0.003	0.001	0.279	
Susa	331	pointe bifide	Malfoy and Menu 1987	97.234	0.001	2.38	0.24	
Susa	332	pointe bifide	Malfoy and Menu 1987	95.885	0.004	3.31	0.023	
Susa	333	pointe bifide	Malfoy and Menu 1987	95.885	0.007	1.67	0.205	
Susa	334	pointe bifide	Malfoy and Menu 1987	96.674	0.009	2.84	0.102	
Susa	335	pointe bifide	Malfoy and Menu 1987	96.762	0.001	3.14	0.006	
Susa	336	pointe bifide	Malfoy and Menu 1987	96.627	0.007	2.01	0.897	
Susa	337	pointe bifide	Malfoy and Menu 1987	96.678	0.003	2.8	0.11	
Susa	338	pointe bifide	Malfoy and Menu 1987	96.807	0.005	1.38	0.816	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	339	pointe bifide	Malfoy and Menu 1987	93.017	5.84	0.37	0.488	
Susa	340	pointe bifide	Malfoy and Menu 1987	95.77	0.003	1.23	2.64	
Susa	341	pointe bifide	Malfoy and Menu 1987	96.852	0.006	2.68	0.092	
Susa	342	pointe bifide	Malfoy and Menu 1987	97.209	0.003	2.56	0.014	
Susa	343	pointe bifide	Malfoy and Menu 1987	97.7105	0.006	1.52	0.359	
Susa	344	pointe bifide	Malfoy and Menu 1987	96.37	0.004	3.19	0.034	
Susa	345	pointe bifide	Malfoy and Menu 1987	96.8635	0.259	1.45	0.267	
Susa	346	pointe bifide	Malfoy and Menu 1987	97.151	0.002	1.81	0.04	
Susa	347	pointe bifide	Malfoy and Menu 1987	96.283	0.003	1.82	1.02	
Susa	348	pointe bifide	Malfoy and Menu 1987	96.507	0.016	2.32	0.028	
Susa	349	pointe bifide	Malfoy and Menu 1987	90.571	0.024	3.58	3.64	
Susa	350	pointe bifide	Malfoy and Menu 1987	96.351	0.242	2.39	0.177	
Susa	351	pointe bifide	Malfoy and Menu 1987	93.0632	0.006	3.11	1.5	
Susa	352	pointe bifide	Malfoy and Menu 1987	96.3517	0.002	3.25	0.053	
Susa	353	pointe bifide	Malfoy and Menu 1987	98.2737	0.007	1.46	0.014	
Susa	354	pointe bifide	Malfoy and Menu 1987	96	0.023	3.42	0.075	
Susa	427	flat axe	Malfoy and Menu 1987	97.0282	0.002	1.66	0.352	
Susa	428	flat axe	Malfoy and Menu 1987	98.7	0.001	0.006	0.009	
Susa	429	flat axe	Malfoy and Menu 1987	95.577	0.002	2.22	0.304	
Susa	430	flat axe	Malfoy and Menu 1987	98.5	0.008	2.59	0.362	
Susa	431	flat axe	Malfoy and Menu 1987	79.8	0.001	2.19	0.63	
Susa	432	flat axe	Malfoy and Menu 1987	95.9	0.001	1.69	0.514	
Susa	434	flat axe	Malfoy and Menu 1987	96.543	0.001	2.19	0.706	
Susa	435	flat axe	Malfoy and Menu 1987	97.914	0.003	1.32	0.335	
Susa	436	flat axe	Malfoy and Menu 1987	92.87	0.01	2.7	1.3	
Susa	437	flat axe	Malfoy and Menu 1987	91	0.001	2.71	0.315	
Susa	438	flat axe	Malfoy and Menu 1987	94.68	0.01	2.6	0.01	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	439	flat axe	Malfoy and Menu 1987	99	0.001	2.15	0.628	
Susa	440	flat axe	Malfoy and Menu 1987	86.52	0.014	1.84	0.72	
Susa	441	flat axe	Malfoy and Menu 1987	89.17	0.067	0.739	0.14	
Susa	442	flat axe	Malfoy and Menu 1987	84.1	0.25	2.13	0.322	
Susa	443	flat axe	Malfoy and Menu 1987	94.1	5.76	1.55	0.253	
Susa	444	flat axe	Malfoy and Menu 1987	97.18	0.083	1.883	0.65	
Susa	445	flat axe	Malfoy and Menu 1987	98.5	0.001	1.13	0.004	
Susa	446	flat axe	Malfoy and Menu 1987	89.9	0.003	3.71	0.087	
Susa	447	flat axe	Malfoy and Menu 1987	92.342	2.63	2.71	0.216	
Susa	448	flat axe	Malfoy and Menu 1987	86.9	9.61	0.843	0.124	
Susa	449	flat axe	Malfoy and Menu 1987	74.8	1.34	0.461	1.84	
Susa	450	flat axe	Malfoy and Menu 1987	96.5	1.84	1.34	0.121	
Susa	451	flat axe	Malfoy and Menu 1987	87.25	0.065	3.079	0.14	
Susa	452	flat axe	Malfoy and Menu 1987	96.4	0.001	4.23	1.32	
Susa	453	flat axe	Malfoy and Menu 1987	96.5	7.99	0.961	0.298	
Susa	454	flat axe	Malfoy and Menu 1987	94.6	0.81	2.33	0.28	
Susa	455	flat axe	Malfoy and Menu 1987	95.3	0.02	1.91	0.051	
Susa	456	flat axe	Malfoy and Menu 1987	88	0.046	3.22	0.204	
Susa	457	flat axe	Malfoy and Menu 1987	95.566	0.04	2.24	0.507	
Susa	458	flat axe	Malfoy and Menu 1987	80.1	11	0.764	0.227	
Susa	459	flat axe	Malfoy and Menu 1987	96.072	0.003	3.15	0.147	
Susa	460	flat axe	Malfoy and Menu 1987	96.875	0.0001	2.11	0.168	
Susa	461	flat axe	Malfoy and Menu 1987	86.8	0.052	2.28	0.113	
Susa	462	hoe (unsocketed)	Malfoy and Menu 1987	94.09	0.1	2.6	0.4	
Susa	463	hoe (unsocketed)	Malfoy and Menu 1987	88.9	7.1	2.2	0.4	
Susa	465	hoe (unsocketed)	Malfoy and Menu 1987	84.06	14.2	0.86	0.01	
Susa	466	hoe (unsocketed)	Malfoy and Menu 1987	96.2	0.01	2.4	0.01	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	469	hoe (unsocketed)	Malfoy and Menu 1987	92.5	0.012	3.65	0.554	
Susa	482	hoe (unsocketed)	Malfoy and Menu 1987	93.53	0.622	1.403	0.04	
Susa	483	hoe (unsocketed)	Malfoy and Menu 1987	98.13	0.17	0.72	0	
Susa	484	hoe (unsocketed)	Malfoy and Menu 1987	96.98	0.02	1.5	0	
Susa	487	burin	Malfoy and Menu 1987	91.6	1.67	0.616	1.81	
Susa	488	burin	Malfoy and Menu 1987	83.5	0.16	2.54	0.595	
Susa	490	burin	Malfoy and Menu 1987	89.1	4.97	1.03	0.231	
Susa	491	burin	Malfoy and Menu 1987	93.752	0.075	2.7	0.98	
Susa	492	burin	Malfoy and Menu 1987	90.9	0.045	1.6	0.225	
Susa	493	burin	Malfoy and Menu 1987	95.4	0.017	0.973	0.319	
Susa	494	burin	Malfoy and Menu 1987	85.6	7.2	0.922	0.345	
Susa	495	burin	Malfoy and Menu 1987	93	6.04	0.956	0.491	
Susa	496	burin	Malfoy and Menu 1987	84.4	0.001	1.34	0.082	
Susa	498	burin	Malfoy and Menu 1987	87.4	0.007	1.98	0.411	
Susa	499	burin	Malfoy and Menu 1987	93.1	0.013	0.506	0.002	
Susa	500	burin	Malfoy and Menu 1987	95.236	2.33	0.707	0.56	
Susa	506	chisel	Malfoy and Menu 1987	93.06	0.17	3.2	0.3	
Susa	512	chisel	Malfoy and Menu 1987	95.1	0.18	2.5	0.4	
Susa	514	bedane	Malfoy and Menu 1987	97.9	0.2	0.58	0.4	
Susa	533	bedane	Malfoy and Menu 1987	96.54	0.21	0.57	1.5	
Susa	536	bedane	Malfoy and Menu 1987	98.64	0	0.39	0	
Susa	538	bedane	Malfoy and Menu 1987	93.91	0.02	3.2	0.94	
Susa	541	bedane	Malfoy and Menu 1987	98.48	0.3	0.15	0.3	
Susa	542	bedane	Malfoy and Menu 1987	93.96	0.02	2.3	0.4	
Susa	543	bedane	Malfoy and Menu 1987	98.36	0	0.3	0	
Susa	545	hoe	Malfoy and Menu 1987	97.42	0.03	0.49	0.3	
Susa	546	hoe	Malfoy and Menu 1987	96.19	0	1.3	0.5	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	552	hoe	Malfoy and Menu 1987	88.88	10	0.2	0.3	
Susa	594	knife	Malfoy and Menu 1987	96.7894	0.001	2.96	0.074	
Susa	621	sickle	Malfoy and Menu 1987	97.9334	0.001	1.1	0.035	
Susa	623	saw	Malfoy and Menu 1987	97.7797	0.045	1.82	0.084	
Susa	624	saw	Malfoy and Menu 1987	96.1227	0.05	2.1	0.2	
Susa	628	saw	Malfoy and Menu 1987	94.34	0.05	4	0.5	
Susa	629	saw	Malfoy and Menu 1987	98.87	0	0.35	0	
Susa	648	ass. Blades	Malfoy and Menu 1987	90	0.66	2.3	0	
Susa	649	ass. Blades	Malfoy and Menu 1987	91.57	0.2	0.22	0.3	
Susa	671	perforating tools	Malfoy and Menu 1987	96.537	0.005	2.68	0.153	
Susa	672	perforating tools	Malfoy and Menu 1987	96.335	0.004	2.87	0.102	
Susa	673	perforating tools	Malfoy and Menu 1987	96.225	0.007	1.77	0.99	
Susa	674	perforating tools	Malfoy and Menu 1987	95.239	0.002	3.54	0.84	
Susa	675	perforating tools	Malfoy and Menu 1987	95	0.018	3.16	0.163	
Susa	678	shovel	Malfoy and Menu 1987	98.09	0	0.73	0	
Susa	683	ascale pans	Malfoy and Menu 1987	96.22	0	1.2	0.4	
Susa	686	rod	Malfoy and Menu 1987	98.68	0	0.2	0	
Susa	687	ingot	Malfoy and Menu 1987	97.63	0	1	0	
Susa	688	ingot	Malfoy and Menu 1987	97.44	0	2	0	
Susa	689	ingot	Malfoy and Menu 1987	97.82	0	1.3	0	
Susa	690	ingot	Malfoy and Menu 1987	97.35	0	1	0	
Susa	691	ingot	Malfoy and Menu 1987	97.17	0	2.2	0	
Susa	693	vessel	Malfoy and Menu 1987	98.96	0.06	0.27	0	
Susa	694	vessel	Malfoy and Menu 1987	97.39	0	1.1	0.4	
Susa	695	vessel	Malfoy and Menu 1987	92.91	2.1	1.8	1.4	
Susa	696	vessel	Malfoy and Menu 1987	96.58	0.04	1.4	0.4	
Susa	697	vessel	Malfoy and Menu 1987	94.48	0.05	1.9	1.5	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	712	vessel	Malfoy and Menu 1987	94.01	0	1.9	0	
Susa	713	vessel	Malfoy and Menu 1987	91.83	0.56	4	0.4	
Susa	717	vessel	Malfoy and Menu 1987	93.76	2	1.4	1.3	
Susa	718	vessel	Malfoy and Menu 1987	95.64	0.02	1.8	0.4	
Susa	751	vessel	Malfoy and Menu 1987	97.3	0	1.4	0	
Susa	753	vessel	Malfoy and Menu 1987	97.9067	0.034	1.13	0.209	
Susa	754	vessel	Malfoy and Menu 1987	97.0757	0.004	1.25	1.28	
Susa	755	vessel	Malfoy and Menu 1987	96.8698	0.022	2.25	0.095	
Susa	756	vessel	Malfoy and Menu 1987	98.7397	0.003	0.947	0.115	
Susa	775	vessel	Malfoy and Menu 1987	92.41	0.74	4.7	0.4	
Susa	780	vessel	Malfoy and Menu 1987	96.6124	0.066	2.69	0.387	
Susa	781	vessel	Malfoy and Menu 1987	92.88	0	6.2	0.4	
Susa	792	vessel	Malfoy and Menu 1987	97.37	0.34	1.12	0.5	
Susa	793	vessel	Malfoy and Menu 1987	89.9	9.2	0.2	0	
Susa	794	vessel	Malfoy and Menu 1987	98.89	0.34	1.12	0.5	
Susa	795	vessel	Malfoy and Menu 1987	88.59	10.9	0.2	0	
Susa	806	vessel	Malfoy and Menu 1987	98.68	0.03	0.04	0.01	
Susa	808	vessel	Malfoy and Menu 1987	90.64	7.6	0.55	0.5	
Susa	834	pin	Malfoy and Menu 1987	92.32	0.87	2.5	0.6	
Susa	835	pin	Malfoy and Menu 1987	92.63	4.3	1.5	0.3	
Susa	836	pin	Malfoy and Menu 1987	90.01	0.45	5.6	0.3	
Susa	837	pin	Malfoy and Menu 1987	94.74	0.13	1.4	0.3	
Susa	990	pin	Malfoy and Menu 1987	96.2507	0.004	1.84	0.427	
Susa	991	pin	Malfoy and Menu 1987	96.6188	0.201	1.99	0.378	
Susa	992	pin	Malfoy and Menu 1987	96.9741	0.03	0.37	0.145	
Susa	993	pin	Malfoy and Menu 1987	98.7252	0.02	0.49	0.054	
Susa	994	pin	Malfoy and Menu 1987	94.866	0.58	0.174	0.026	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	1002	pin	Malfoy and Menu 1987	97.479	0.01	1.72	0.18	
Susa	1046	pin	Malfoy and Menu 1987	94.397	4.8	0.17	0.32	
Susa	1052	pin	Malfoy and Menu 1987	97.262	0.55	1.2	0.11	
Susa	1075	bangle	Malfoy and Menu 1987	96.55	0.12	1.3	0.5	
Susa	1086	bangle	Malfoy and Menu 1987	95.07	0.79	1.8	0.4	
Susa	1246	toilet set	Malfoy and Menu 1987	92.26	0.06	3.8	0.5	
Susa	1290	chariot parts	Malfoy and Menu 1987	96.409	0.009	1.54	0.95	
Susa	1291	chariot parts	Malfoy and Menu 1987	98.522	0.002	1.03	0.036	
Susa	1293	chariot parts	Malfoy and Menu 1987	96.562	0.004	3.02	0.012	
Susa	1294	chariot parts	Malfoy and Menu 1987	96.672	0.004	2.61	0.371	
Susa	1295	chariot parts	Malfoy and Menu 1987	95.576	0.001	2.03	1.38	
Susa	1296	chariot parts	Malfoy and Menu 1987	96.6315	0.005	1.99	0.727	
Susa	1297	chariot parts	Malfoy and Menu 1987	97.4847	0.004	1.81	0.305	
Susa	1298	chariot parts	Malfoy and Menu 1987	92.5305	5.47	0.61	0.354	
Susa	1321	figurine	Malfoy and Menu 1987	98.07	0	0.49	0.96	foundation deposit- Ninhursag
Susa	1322	figurine	Malfoy and Menu 1987	96.78	0	0.68	1.9	
Susa	1323	figurine	Malfoy and Menu 1987	99.21	0.02	0.36	0	
Susa	1324	figurine	Malfoy and Menu 1987	99.07	0	0.4	0	
Susa	1325	figurine	Malfoy and Menu 1987	99.47	0	0.2	0	
Susa	1326	figurine	Malfoy and Menu 1987	99.22	0	0.32	0	
Susa	1327	figurine	Malfoy and Menu 1987	99.4	0.02	0.15	0	
Susa	1328	figurine	Malfoy and Menu 1987	98.98	0.02	0.43	0	
Susa	1329	figurine	Malfoy and Menu 1987	98.39	0	0.36	0.76	foundation deposit- Inshushinak
Susa	1330	figurine	Malfoy and Menu 1987	99.1	0	0.15	0.3	
Susa	1331	figurine	Malfoy and Menu 1987	98.77	0	0.4	0.3	
Susa	1332	figurine	Malfoy and Menu 1987	98.86	0	0.42	0.3	
Susa	1333	figurine	Malfoy and Menu 1987	98.86	0	0.25	0.3	

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Susa	1334	figurine	Malfoy and Menu 1987	98.26	0	0.36	0.54	
Susa	1335	figurine	Malfoy and Menu 1987	98.89	0	0.32	0.3	
Susa	1336	figurine	Malfoy and Menu 1987	99.32	0	0.22	0	
Kish Mound 'A'	1925.182 (18)	axe-head	Moorey 1972	n/a	0	1.4	n/a	EDIIIb-Akkadian
Kish Mound 'A'	1926.452 (37)	pin	Moorey 1972	n/a	3.5	1	n/a	EDIIIb-Akkadian
Kish Mound 'A'	1926.454 (34)	pin	Moorey 1972	n/a	0	0.3	n/a	EDIIIb-Akkadian
Kish Mound 'A'	1925.528 (25)	pinhead	Moorey 1972	n/a	0	5.6	n/a	EDIIIb-Akkadian
Kish Mound 'A'	1928.481 (130)	bowl	Moorey 1972	n/a	0	0.2	n/a	EDIIIb-Akkadian
Kish Mound 'A'	1926.451 (38)	wedge	Moorey 1972	n/a	6	0.2	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.178 (29)	axe-head	Moorey 1972	n/a	0	0.3	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.160 (36)	axe-head	Moorey 1972	n/a	0.5	<.2	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.250 (20)	axe-head	Moorey 1972	n/a	15.5	1.9	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1926.525 (33)	dagger-blade	Moorey 1972	n/a	0	2.3	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1926.526 (17)	dagger-blade	Moorey 1972	n/a	0	2.8	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.174 (19)	dagger-blade	Moorey 1972	n/a	3	4.3	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.183 (31)	flat triangular blade	Moorey 1972	n/a	0	0.3	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.177 (32)	knife-blade	Moorey 1972	n/a	0	0.5	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.173 (35)	pin	Moorey 1972	n/a	0	6.5	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.176 (26)	pin	Moorey 1972	n/a	0	1.5	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.186 (28)	pin	Moorey 1972	n/a	0	3.1	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1924.292 (126)	bowl	Moorey 1972	n/a	0	2.5	n/a	EDIIIb-Akkadian

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Kish Cem 'A'	1925.193 (129)	bowl	Moorey 1972	n/a	0	0.6	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.197 (127)	bowl	Moorey 1972	n/a	1	3.3	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.245 (89)	handled bowl	Moorey 1972	n/a	11.6	1.2	n/a	EDIIIb-Akkadian
Kish Cem 'A'	1925.246 (90)	cosmetic dish	Moorey 1972	n/a	2.2	0.2	n/a	EDIIIb-Akkadian
Tell Brak	1939.275 (68)	arrowhead	Moorey 1972	n/a	0	0.7	n/a	Akkadian
Tell Brak	1939.277 (70)	awl	Moorey 1972	n/a	0	0.4	n/a	Akkadian
Tell Brak	1939.280 (71)	awl	Moorey 1972	n/a	0	1.2	n/a	Akkadian
Tell Brak	1939.294 (65)	knife-blade	Moorey 1972	n/a	0	2.8	n/a	Akkadian
Tell Brak	1938.47 (78)	needle	Moorey 1972	n/a	0	0.2	n/a	Akkadian
Tell Brak	1938.46 (79)	needle	Moorey 1972	n/a	0	2	n/a	Akkadian
Tell Brak	1939.285 (73)	pin	Moorey 1972	n/a	2.2	1.2	n/a	Akkadian
Tell Brak	1939.287 (73)	pin	Moorey 1972	n/a	0	4.5	n/a	Akkadian
Tell Brak	1939.243 (75)	pin	Moorey 1972	n/a	0	1.4	n/a	Akkadian
Tell Brak	1939.286 (76)	pin	Moorey 1972	n/a	1.4	0.2	n/a	Akkadian
Tell Brak	1938.51 (77)	pin	Moorey 1972	n/a	1.4	1.1	n/a	Akkadian
Tell Brak	1938.52 (80)	pin	Moorey 1972	n/a	0	1.3	n/a	Akkadian
Tell Brak	1938.50 (81)	pin	Moorey 1972	n/a	0	1.6	n/a	Akkadian
Tell Brak	1939.279 (72)	pin or awl casting	Moorey 1972	n/a	0.9	1.1	n/a	Akkadian
Tell Brak	1939.276 (67)	rough bar casting	Moorey 1972	n/a	9.4	2	n/a	Akkadian
Tell Brak	1939.296 (69)	sheet	Moorey 1972	n/a	0.5	1.2	n/a	Akkadian
Tell Brak	1939.295 (64)	sickle	Moorey 1972	n/a	0	0.6	n/a	Akkadian
Tell Brak	1939.281 (66)	wedge	Moorey 1972	n/a	9.3	0.4	n/a	Akkadian
Ur Cem	1935.870 (9/91)	shaft-hole axe	Moorey 1972	n/a	1.2	0.2	n/a	EDIII
Ur Cem	1933.248 (131)	shaft-hole axe	Moorey 1972	n/a	0	1.2	n/a	EDIII
Ur Cem	1935.869 (16)	shaft-hole axe	Moorey 1972	n/a	5.5	1.6	n/a	EDIII

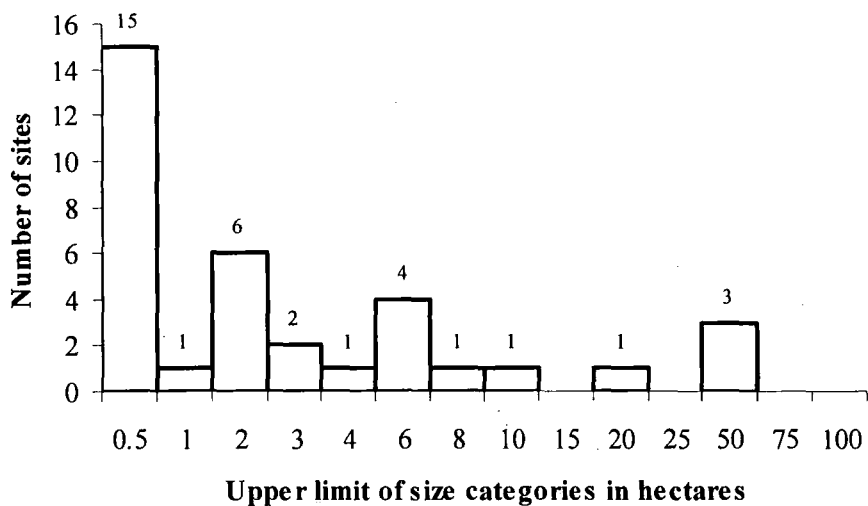
Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Ur Cem	1933.245 (39)	dagger-blade	Moorey 1972	n/a	0	1.1	n/a	EDIII
Ur Cem	1933.247 (14)	spear-point	Moorey 1972	n/a	0	1.7	n/a	EDIII
Uruk	w24271a	bowl	Lutz et. al. 1996	90	9.6	0.2	0	Akkadian
Uruk	w24271b	cauldron	Lutz et. al. 1996	95	1.16	1.3	0.7	Akkadian
Uruk	w14014	arrowhead	Lutz et. al. 1996	94	4.1	0	0.1	ED I/II
Uruk	w14542	dagger	Lutz et. al. 1996	88	10.4	0.3	0.02	ED I/II
Uruk	w19970	dagger	Lutz et. al. 1996	97	0.1	2.3	0.2	ED I/II
Uruk	w18670a	gründungsbügel	Lutz et. al. 1996	92	0.01	1	7.1	ED III
Uruk	w19735	flataxe	Lutz et. al. 1996	91	8.2	0.5	0	ED III
Uruk	w19798	chisel	Lutz et. al. 1996	99	0.04	0.4	0.03	ED III
Uruk	w19857	socketted Harpoon	Lutz et. al. 1996	98	0.09	1.7	0.1	ED III
Uruk	w24303	socketted hoe	Lutz et. al. 1996	90	2.51	3.4	0.9	ED III/ Akkadian
Uruk	w24306	brass axe	Lutz et. al. 1996	98	0.19	0.8	1	ED III/ Akkadian
Uruk	w24495	chisel	Lutz et. al. 1996	96	0.06	2.3	0.2	ED III/ Akkadian
Uruk	w19810b	vessel fragments	Lutz et. al. 1996	89	9.2	0.7	0.2	OB
Uruk	w19833a	blade	Lutz et. al. 1996	97	0.1	0.4	0.3	OB
Uruk	w19950a	arrowhead	Lutz et. al. 1996	99	0.02	0.2	0	OB
Uruk	w19950b	arrowhead	Lutz et. al. 1996	99	0	0.2	0	OB
Uruk	w19981a	needle	Lutz et. al. 1996	98	0.04	0.1	0.4	OB
Uruk	w19985	socketted axe	Lutz et. al. 1996	87	12.2	0.5	0.1	OB
Uruk	w20037b	hammer or ingot	Lutz et. al. 1996	99	0.06	0.3	0.1	OB
Uruk	w20130	bent wire	Lutz et. al. 1996	66	14.9	2.8	15.4	OB
Uruk	w20399	slag	Lutz et. al. 1996	99	0	0	0	OB
Uruk	w20443	arrowhead	Lutz et. al. 1996	96	0.07	2.4	0.5	OB
Uruk	w20769	rod with	Lutz et. al. 1996	98	0.17	1	0.2	OB

Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
		compressed end						
Uruk	w21237,1	bracelet	Lutz et. al. 1996	92	4.3	1.9	1.4	OB
Uruk	w21238,1	needle (peirced Shaft)	Lutz et. al. 1996	89	0.07	5.3	3.1	OB
Uruk	w21238,2	ring	Lutz et. al. 1996	97	2.78	0.1	0	OB
Uruk	w21879	arrowhead	Lutz et. al. 1996	99	0.56	0.3	0	OB
Uruk	w21670	spatula	Lutz et. al. 1996	97	0.01	1.9	0.3	Ur III/ OB
Uruk	w22217	socketted spearhead	Lutz et. al. 1996	89	9.1	1.1	0.3	Ur III/ OB
Temple Oval	Kh II 75	arrow butt	Delougaz 1939	99.29	0	0.63	0	
Temple Oval	Kh III 1072	pin	Delougaz 1939	96.4	0.3	1.85	0	
Temple Oval	Kh III 688	pin	Delougaz 1939	98.72	0.33	0.87	0	
Temple Oval	Kh III 44	dagger	Delougaz 1939	98.5	3.19	1	0	
Temple Oval	Kh III 215	pin	Delougaz 1939	95.03	3.69	1.18	0	
Temple Oval	Kh III 729	pin	Delougaz 1939	93.94	6	0	trace	
Temple Oval	Kh III 904	blade	Delougaz 1939	89.08	10.5	0.25	0	
Temple Oval	Kh III 850	pin	Delougaz 1939	88.42	10.8	0.69	0	
Temple Oval	Kh I 351a	statuette	Delougaz 1939	99	0.63	0	0	
Tell Abraq	TA1387	blob	Weeks 1997	97.64	0.53	0	0.81	settlement
Tell Abraq	TA1389	pin/awl	Weeks 1997	42.09	0	0	7.39	settlement
Tell Abraq	TA1428	pin/awl	Weeks 1997	84.98	1.01	0	0.66	settlement
Tell Abraq	TA107	ring	Weeks 1997	26.67	65.5	5.49	0	settlement
Tell Abraq	TA1310	ring	Weeks 1997	99.45	0.06	0	0.34	settlement
Tell Abraq	TA1229	ring	Weeks 1997	0	89	0	1	settlement
Tell Abraq	TA1232	ring	Weeks 1997	19.06	76.2	0	0.55	settlement
Tell Abraq	TA727	spatula	Weeks 1997	93.86	1.07	1	0.1	settlement
Tell Abraq	TA1231	spear	Weeks 1997	81.66	2.17	0	1.24	settlement

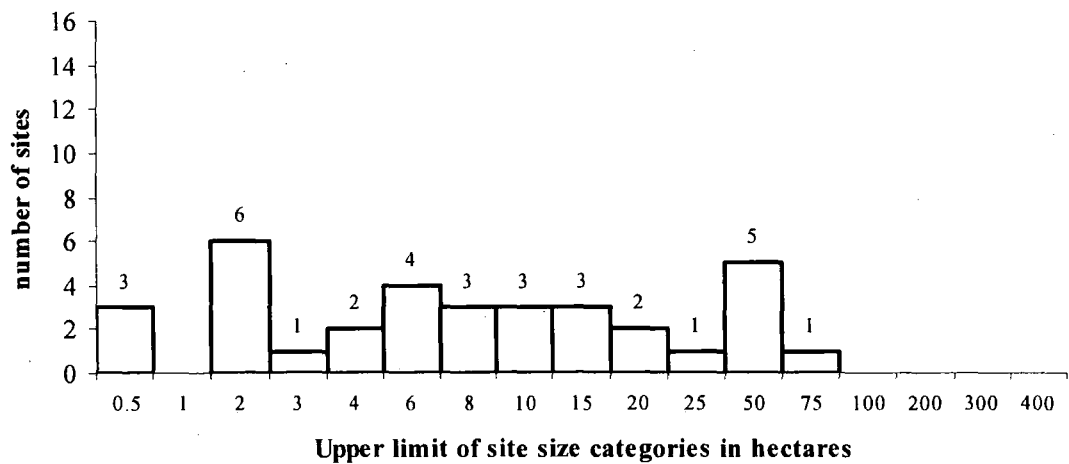
Site	Catal Num	Object	Source	Cu	Sn	As	Pb	Comments
Tell Abraq	TA699	vessel	Weeks 1997	74.39	25	0	0	settlement
Tell Abraq	TA1227	vessel	Weeks 1997	92.55	0	0.1	0	settlement
Tell Abraq	TA1426	vessel	Weeks 1997	94.22	0	0	2.92	settlement
Tell Abraq	TA1556	bracelet	Weeks 1997	53.77	40.2	0.1	0.21	tomb
Tell Abraq	TA1641	bracelet	Weeks 1997	97.35	0.06	0	1.94	tomb
Tell Abraq	TA1472	pin/ hook	Weeks 1997	43.6	52.8	0	0.31	tomb
Tell Abraq	TA1459	pin/awl	Weeks 1997	26.83	60.2	0	10.7	tomb
Tell Abraq	TA1612	pin/awl	Weeks 1997	91.94	0.26	0.5	3.21	tomb
Tell Abraq	TA1585	point	Weeks 1997	97.54	0	0	1.41	tomb
Tell Abraq	TA1303	ring	Weeks 1997	34.52	57.9	0	4.89	tomb
Tell Abraq	TA1371	ring	Weeks 1997	1.71	83.6	0	1.95	tomb
Tell Abraq	TA1460	ring	Weeks 1997	99	0	0	0.5	tomb
Tell Abraq	TA1461	ring	Weeks 1997	96.4	0	0.1	0	tomb
Tell Abraq	TA1467	ring	Weeks 1997	91.33	0	0	5.7	tomb
Tell Abraq	TA1471	ring	Weeks 1997	99.42	0.1	0	0.17	tomb
Tell Abraq	TA1558	ring	Weeks 1997	52.49	39.1	0.1	0	tomb
Tell Abraq	TA1614	ring	Weeks 1997	71.96	20.8	0.1	0	tomb
Tell Abraq	TA1648	spear	Weeks 1997	85.46	12	0.1	0.59	tomb
Tell Abraq	TA1217	vessel	Weeks 1997	68.62	30	0	0.47	tomb
Tell Abraq	TA1286	vessel	Weeks 1997	60.71	34.3	0.1	0	tomb
Tell Abraq	TA1306	vessel	Weeks 1997	67.29	29.1	0.1	0	tomb
Tell Abraq	TA1368	vessel	Weeks 1997	72.45	25.5	0.1	0.04	tomb

Appendix G: Problems recreating Adams' influential 'four-tiered' settlement hierarchy.

The two figures below present the settlement hierarchy for the Nippur-Adab area, as published by Adams (1981: 84), and as recreated using raw data from *Heartland of cities* (Adams 1981). There are significant differences, which are hard to account for. Whilst the lower number of small sites may be due to issues related to how data was extracted from Adams' database in this study, the omission by Adams of a site between 50ha and 60ha (Adab, tabulated as 60ha by Adams 1981: 116, and marked on maps of successive periods as maintaining a size of '40+ ha') is odd. Equally confusing are the two extra sites in the region of 25ha to 50ha; the five found here are: Nippur (tabulated at 50ha by Adams 1981: 116, and marked on maps of successive periods as '40+ ha'), site 1306 (described by Adams as measuring 1100m by 450m, yielding a maximum size of 49.5ha), site 1459 (described as having a radius of 350m by Adams 1981, yielding an area of 30.23ha), site 1032 (described by Adams 1981 as having dimensions of 770m by 380m, yielding a maximum area of 29.26ha) and site 798 (described as having dimensions of 600m by 450m by Adams 1981, yielding a maximum size of 27ha).



Site size hierarchy for EDI Nippur-Adab, as published by Adams (1981: 84).



Site size hierarchy for EDI Nippur-Adab, as replicated from Adams' (1981) database.

Appendix H: Problems With Using Sites On The Indus Floodplain In Settlement Analyses.

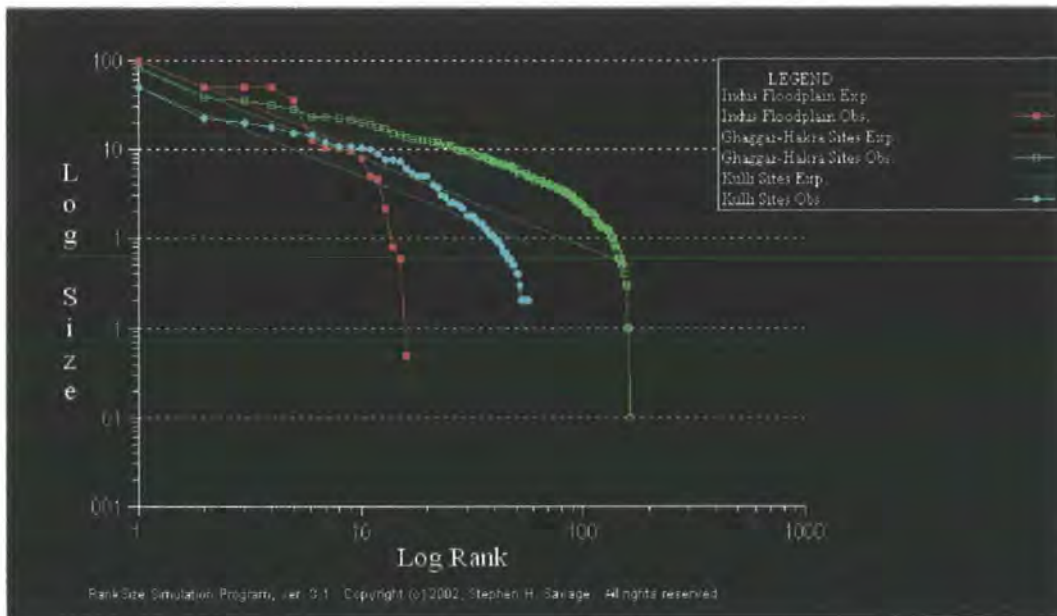
It is very likely that alluviation, erosion, later site reuse and effects of modern agricultural practise will all have varied significantly across such a wide and ecologically and environmentally diverse area. The modern remains of the ancient settlement patterns cannot be assumed to be uniform over the entire area, even if they were identical in antiquity. To demonstrate the possible effects of such environmental factors, the settlement patterns of three areas within the Greater Indus Valley, each with different geographical circumstances, may be compared; they are sites on the Indus floodplain, sites on the Ghaggar-Hakra floodplain¹ and Kulli sites in Baluchistan (see fig.X). The former are river valley sites, which have been covered by silting at a rate of 15-20cm/ 100 years since the end of the Mature Harappan period nearly 4000 years ago {at Mohenjo Daro, occupational deposits have been discovered 16.6m below the present level of the floodplain, \Pal, 1984 #118: 457}. The Ghaggar-Hakra, by contrast, is well-known to have dried up around the end of the Mature Harappan period {e.g. \Mughal, 1992 #208;Raikes, 1969 #209;Pal, 1984 #210}, and as such it can be suggested that the bulk of smaller sites will not have been covered by rising alluvium during the subsequent four millennia. Further to this, desertification after the drying up of the Ghaggar-Hakra has meant that agriculture has been, until recent irrigation, only a negligible influence on site preservation compared to the situation which may be envisioned for Sindh. Finally, the Kulli sites of Baluchistan have been considered, as they are highland sites, subject to very different geographical constraints, both in their original location and subsequent survival archaeologically. Kulli sites are typically found above river valleys of the Baluchi hills, located just off the sparse cultivable area {Possehl, 1986 #133}.

Using a rank-size plot to compare (rather than analyse) the patterns of settlement in the three areas, it is immediately obvious that a different process is at work in the distribution of Indus floodplain sites. Not only are there far fewer sites (only 16; including Tharo Waro Daro and Nagoor, both in the district of Sukkur, but for which no locational information exists) than those located in Cholistan and Baluchistan, but the pattern is truncated suddenly around the 10-hectare mark. Whereas in the other two areas the majority proportion of the sites are in the region of .1-10 hectares, in the Indus floodplain there are only 8 in this range. In contrast, the Baluchi and Cholistan settlement patterns bear a marked similarity in comparison to the Indus floodplain; whilst all three are primo-convex, both the Ghaggar-Hakra and Kulli systems are less deviant from log-normal, and produce a less erratic curve. This similarity (compared to the Indus sites) is all the more striking considering that the Baluchi sites reflect a highland settlement network, and the Cholistan sites a lowland floodplain setting, just like the Indus.

It seems improbable that the Indus floodplain only ever had 16 Mature Harappan sites on it, especially considering the situation in the environmentally similar setting of the Ghaggar-Hakra valley. This adequately demonstrates that various factors including survey coverage and methodology, along with geological

¹ These are restricted to those sites in Cholistan located and listed by Mughal (1997). Although this omits such important sites as Kalibangan, the thoroughness of Mughal's survey compared to that on the Indian side of the border favour the consideration of the Pakistani data as a separate unit.

processes have differentially affected settlement recovery rates over the Greater Indus valley. Settlement in this area cannot, therefore, be considered as representative or useful for comparative analysis. The Indus floodplain itself (whilst considered the 'home' of the prototypical 'Sindhi Harappan' culture) should probably not be considered in *any* settlement analyses, as it seems likely that the sites there reflect a very small, very biased sample. Flam's discovery that mean site size in lower Sindh produced results skewed towards larger sites {, 1981 #132:158} is better understood in the light of the alluvial processes most likely exerting a heavy influence on the archaeologically recoverable settlement patterns in this area. This also suggests that the characterization of the Mature Harappan as a shift of settlement onto the more fertile alluvial plains {Allchin, 1982 #154: 165}, is probably incorrect; it is entirely possible that a flourishing Early Harappan settlement pattern is even more obscured to us by alluviation than the subsequent Mature Harappan settlements.



Rank-size plot showing the absence of smaller sites on the Indus floodplain.

Note to Metalwork Illustrations

Due to considerations of space, the illustrations of metalwork accompanying Chapter 4 are not to scale. Analysis has primarily involved comparisons of artefact form, and a consideration of dimensions has not been a factor.

The artefacts here illustrated have been reproduced from a number of publications. Sitewise, credits are as follows:

Indus

Mohenjo Daro: (Mackay 1938; Marshall 1931); the exceptions being vessels (Yule 1985b), figurines and personal adornment (Yule 1985a).

Harappa: (Vats 1940); the exceptions being vessels (Yule 1985b), figurines and personal adornment (Yule 1985a).

Chanhudaro: (Mackay 1943); the exceptions being vessels (Yule 1985b) and personal adornment (Yule 1985a).

Lothal: (Rao 1985).

Kuntasi: (Dhavalikar 1992).

Surkotada: (Joshi 1990).

Shortughai: (Francfort 1989).

Mesopotamia

Ur (residential areas): (Woolley and Mallowan 1976).

Tell Brak: (Oates, et al. 2001).

Uruk: (Pedde 1992, 2000).

Nippur: (McCown, et al. 1967).

Ur (Royal Cemetery): (Woolley 1934); excepting vessels (Müller-Karpe 1993).

Kish ('A' Cemetery): (Mackay 1925, 1929); excepting vessels (Müller-Karpe 1993).

Iran

Susa: (Tallon 1987).

Tepe Hissar: (Schmidt 1937).

Shahdad: (Hakemi 1997).

Egypt

Gurob: (Petrie 1890; Thomas 1981).

Kahun: (Petrie 1890).

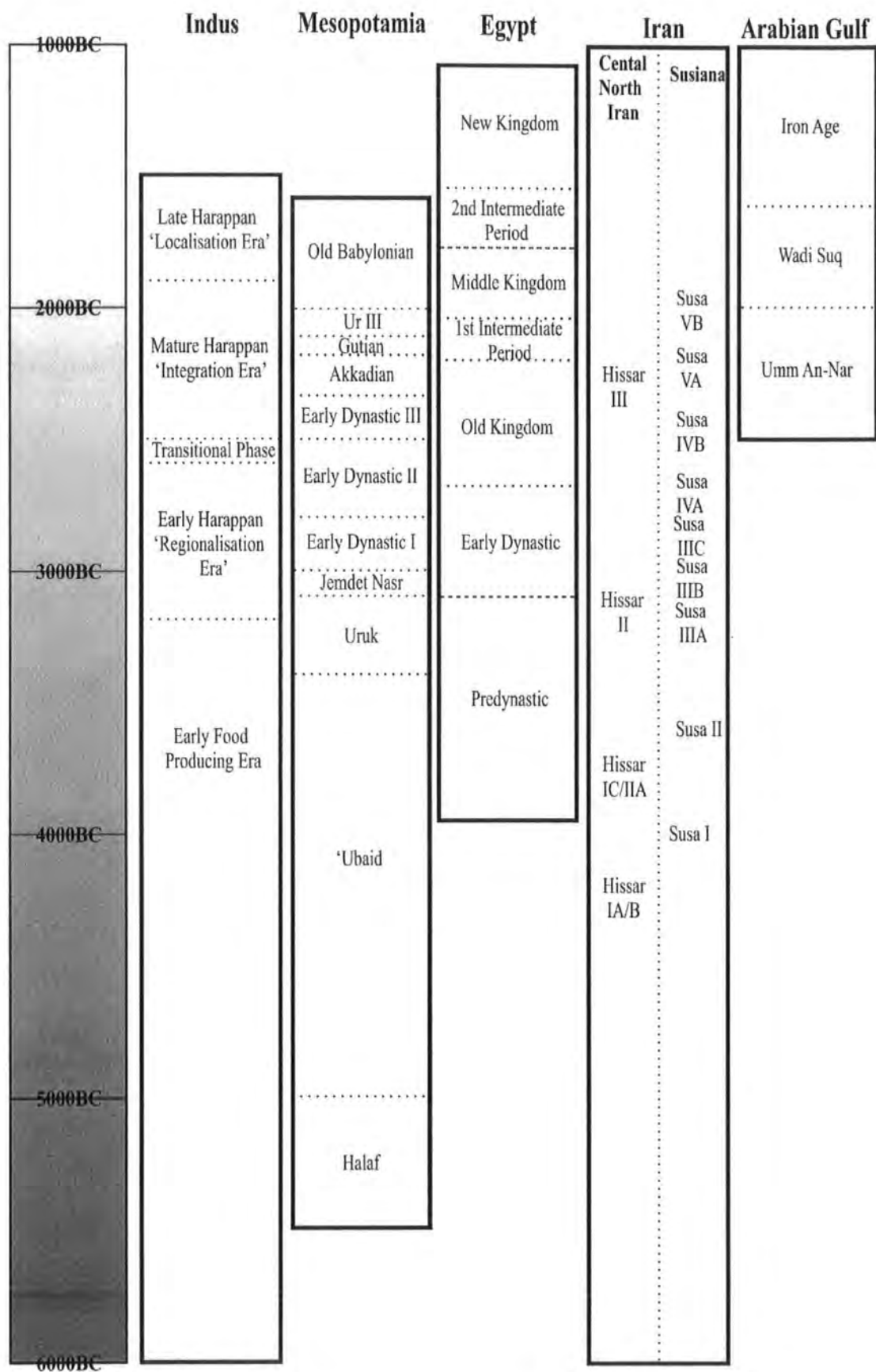
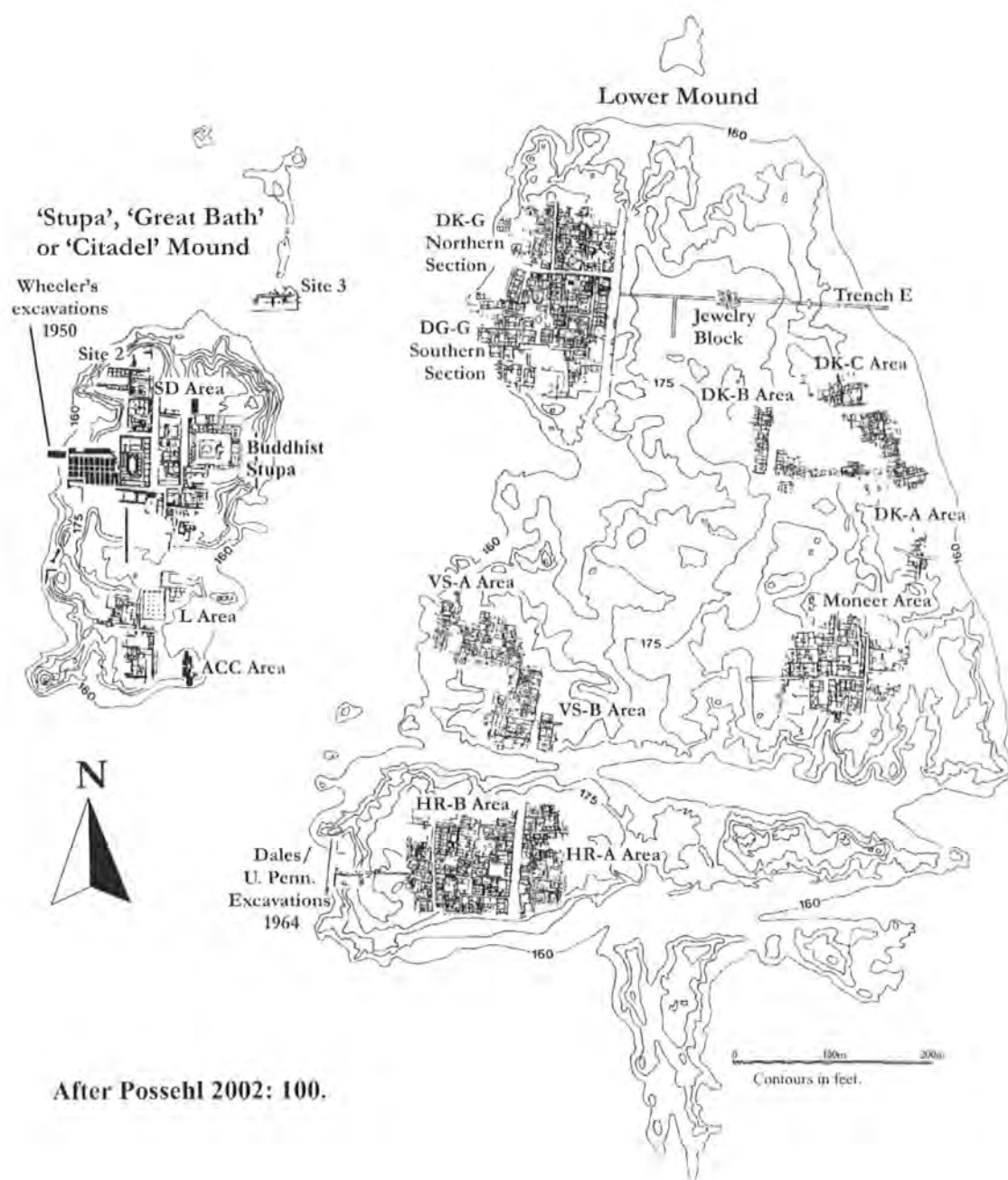


Fig. 1.1. Dateline of various areas discussed.



After Posschl 2002: 100.

Fig. 3.1. Site plan of Mohenjo Daro showing excavated areas.

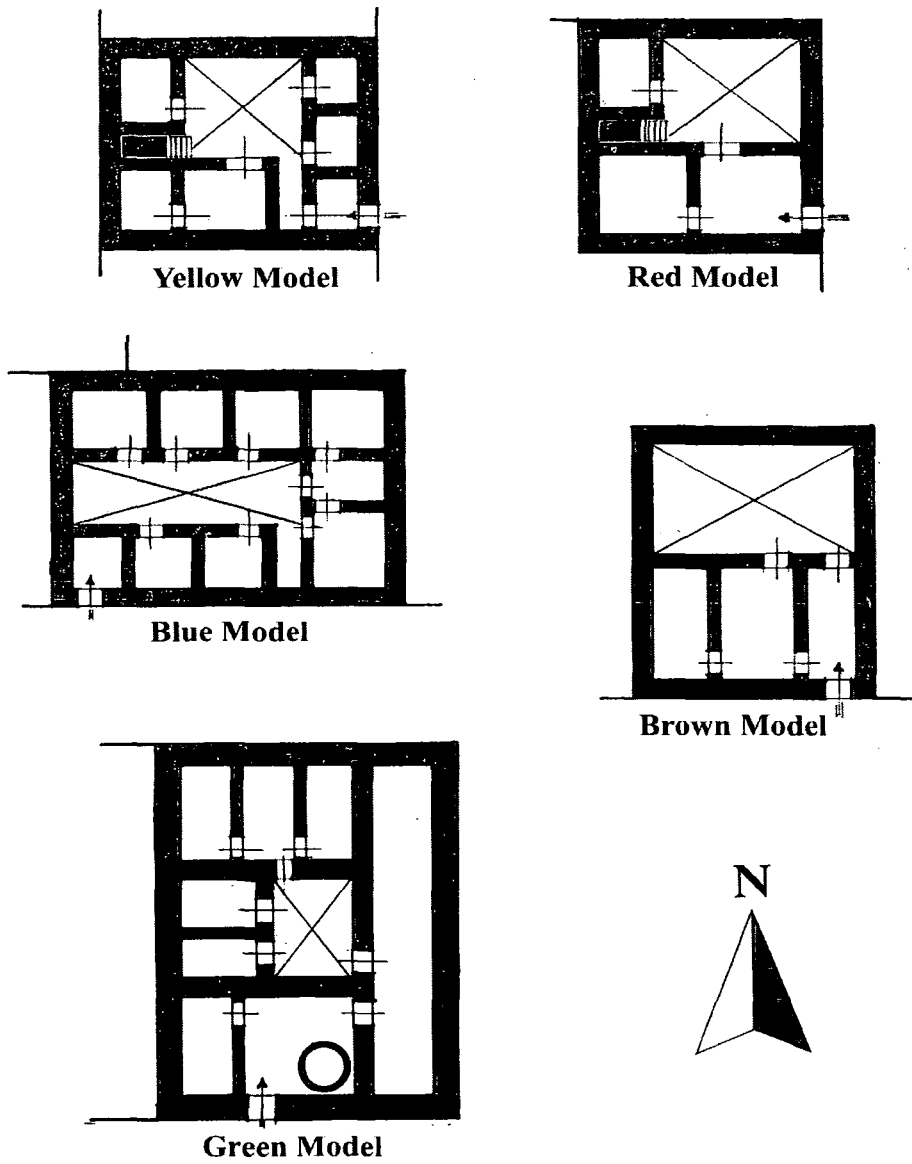


Fig. 3.2. Sarcina's typology of houses at Mohenjo Daro.

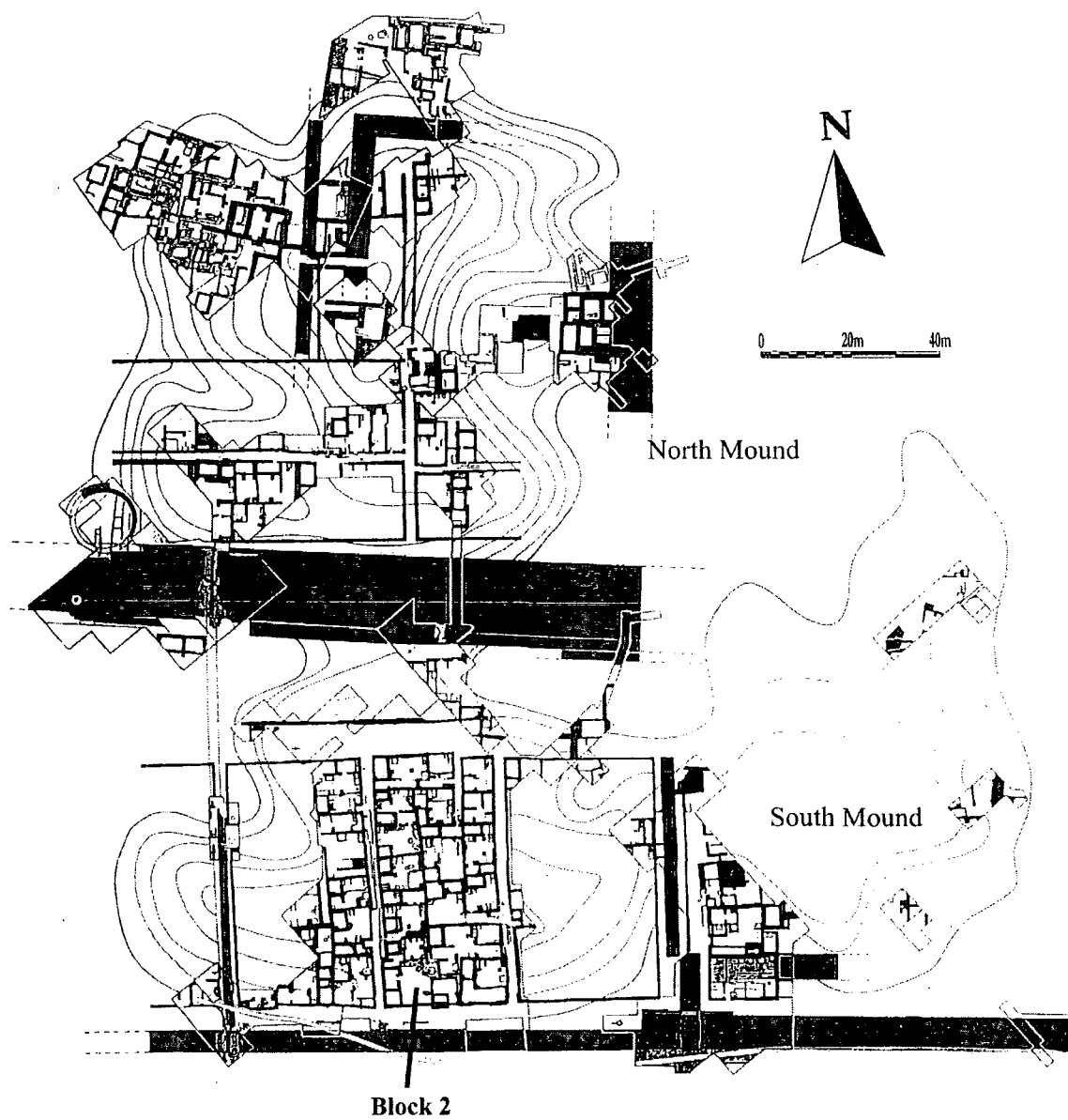


Fig. 3.3. Site plan of Nausharo showing relevant areas.

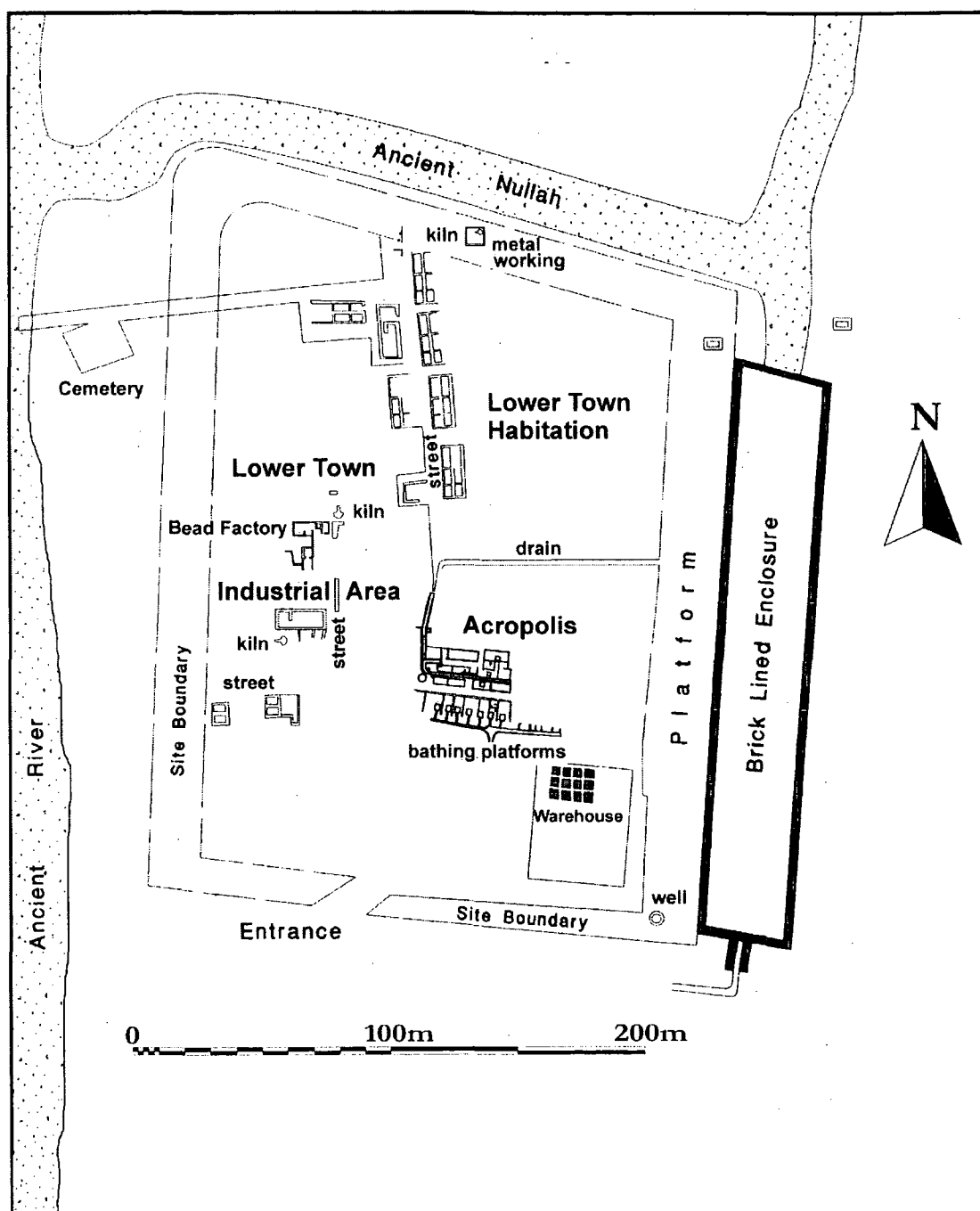


Fig. 3.4. Site plan of Lothal showing relevant areas.

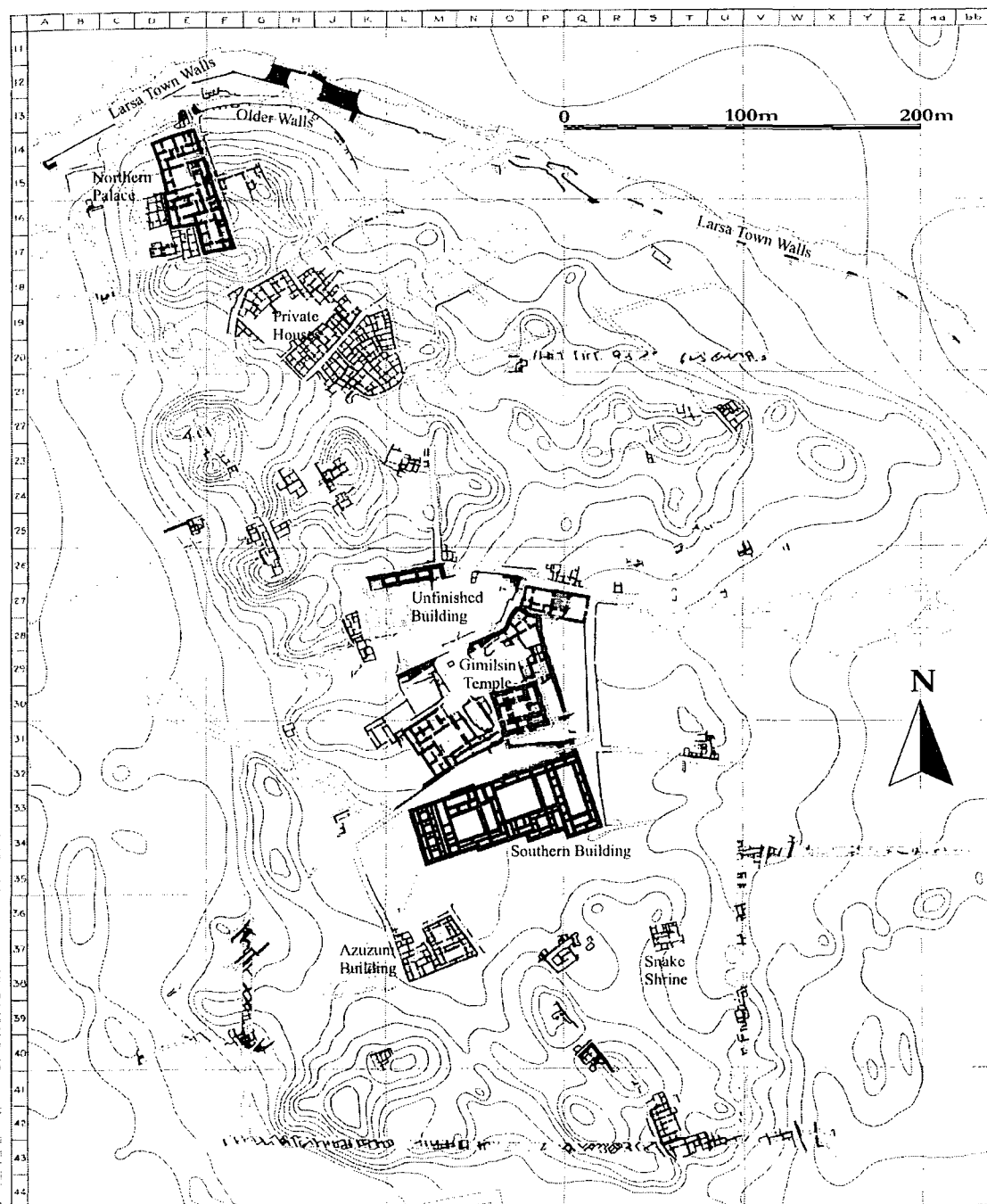


Fig. 3.5. Site plan of Asmar showing relevant areas.

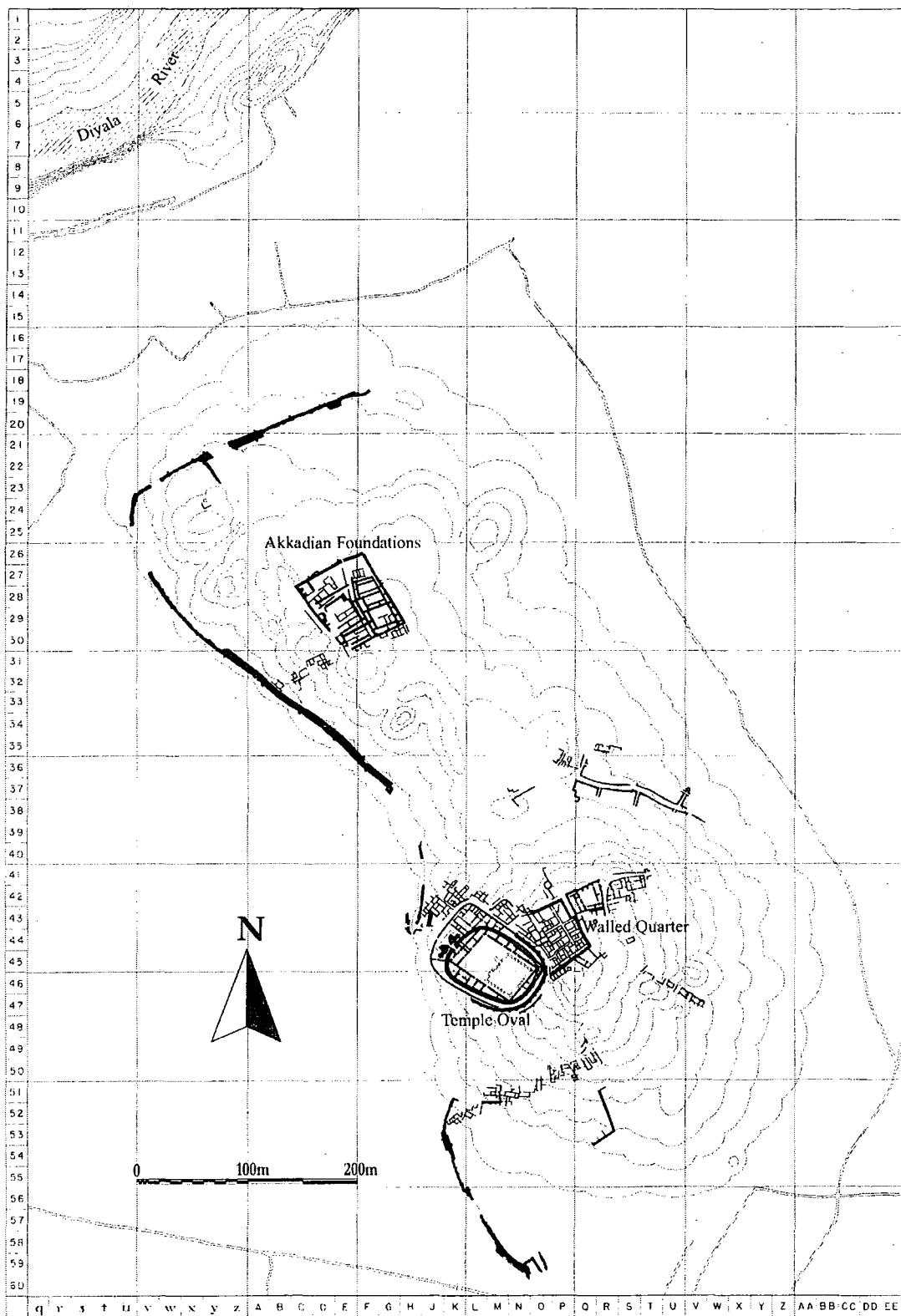


Fig. 3.6. Site plan of Khafajah showing relevant areas.

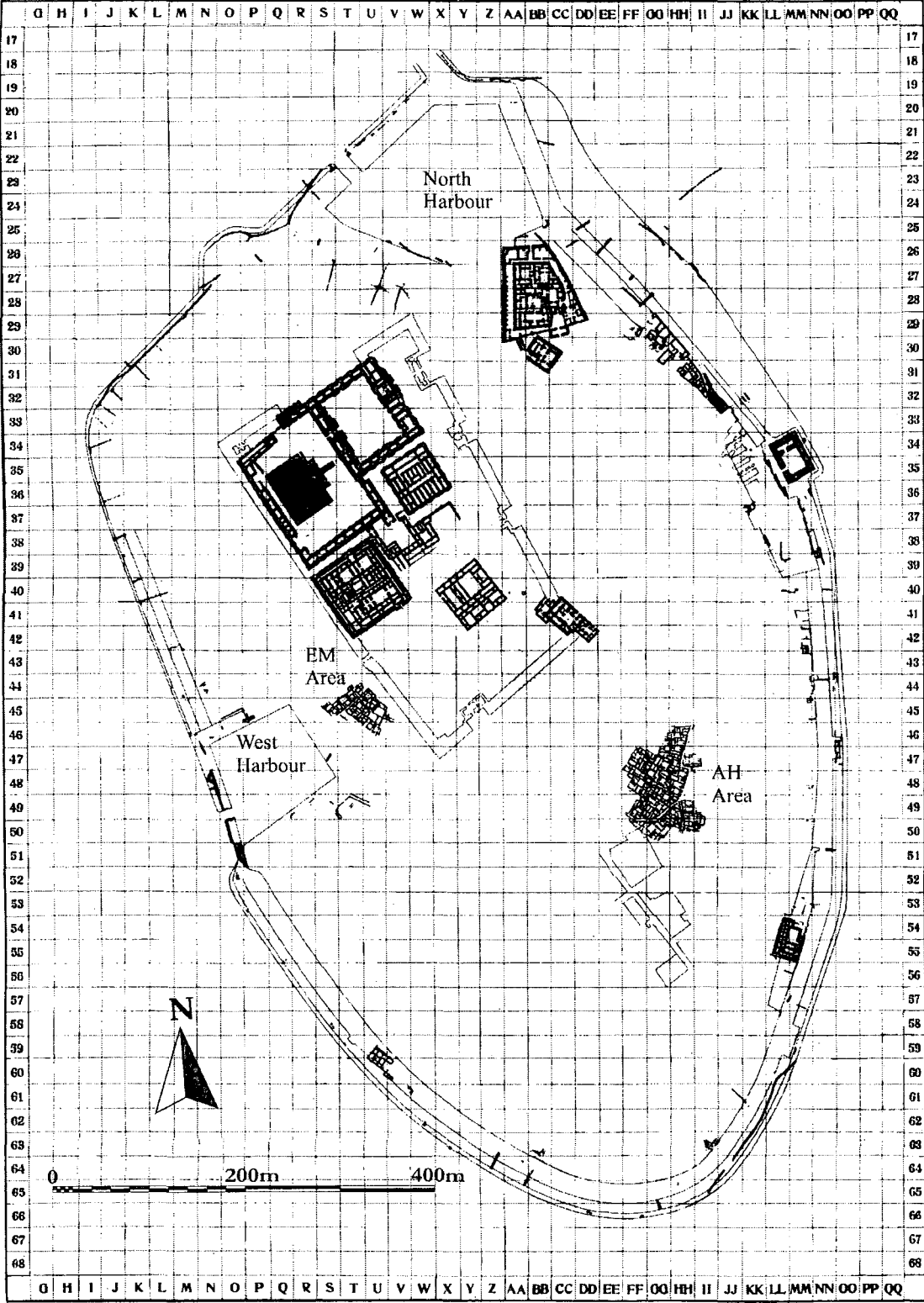


Fig. 3.7. Site plan of Ur showing relevant areas.



Fig. 3.8. Site plan of Nippur showing relevant areas.

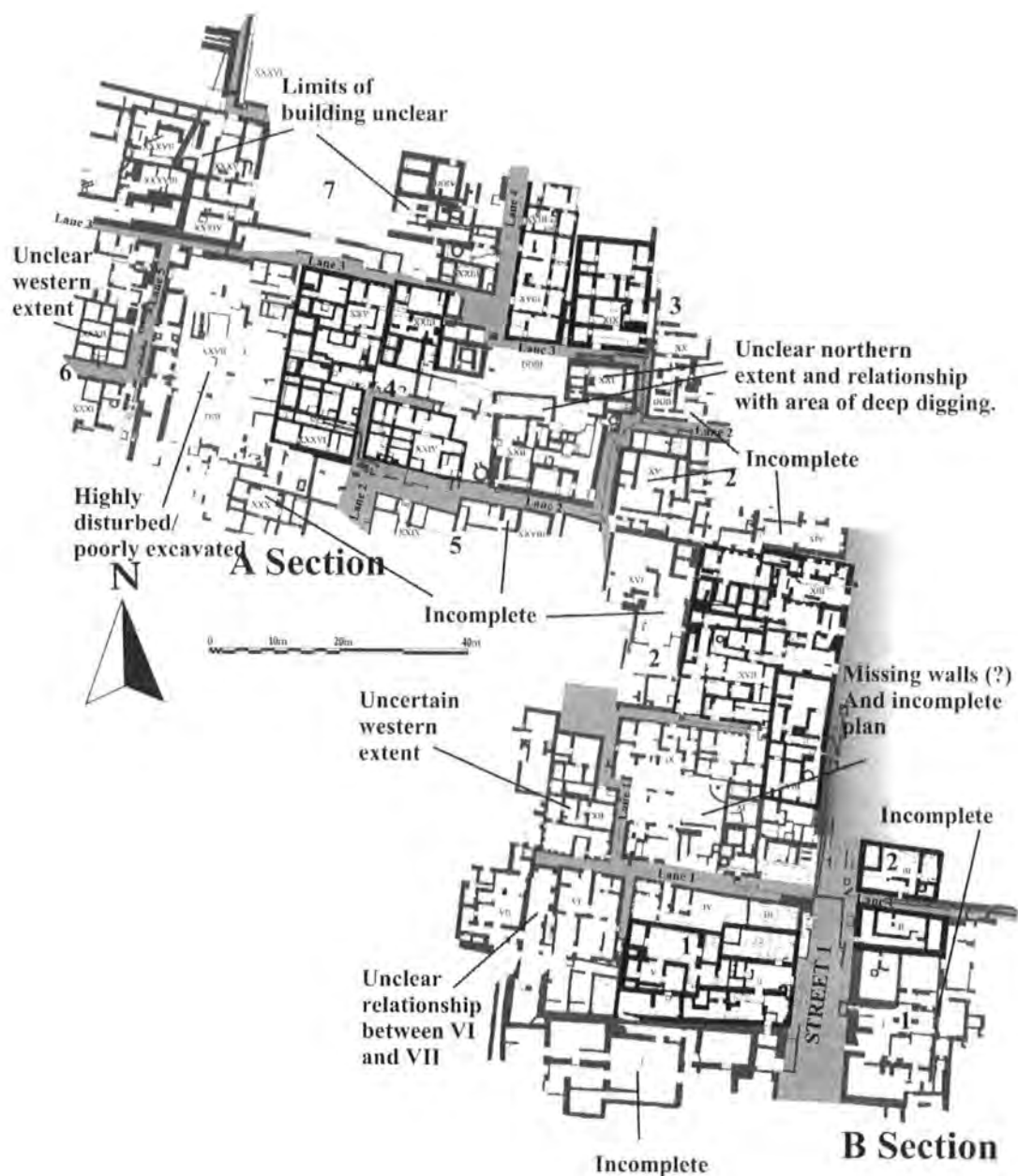


Fig. 3.9. Plan of the VS area at Mohenjo Daro showing the problems in delineating buildings.



Fig. 3.10. Plan of the DK-G (S) area (Intermediate Period) at Mohenjo Daro.

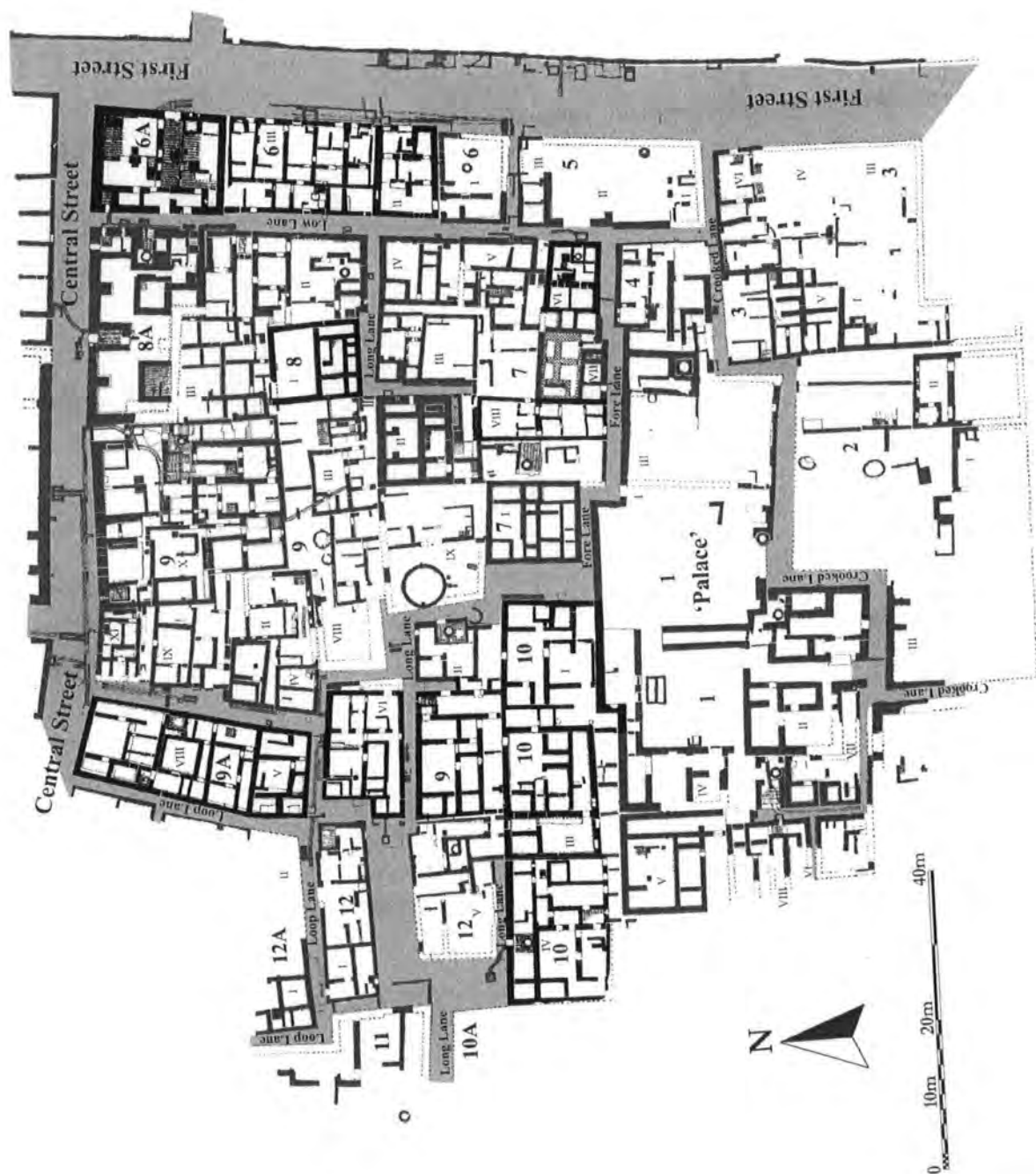


Fig. 3.11. Plan of the DK-G (S) area (Late Period) at Mohenjo Daro.

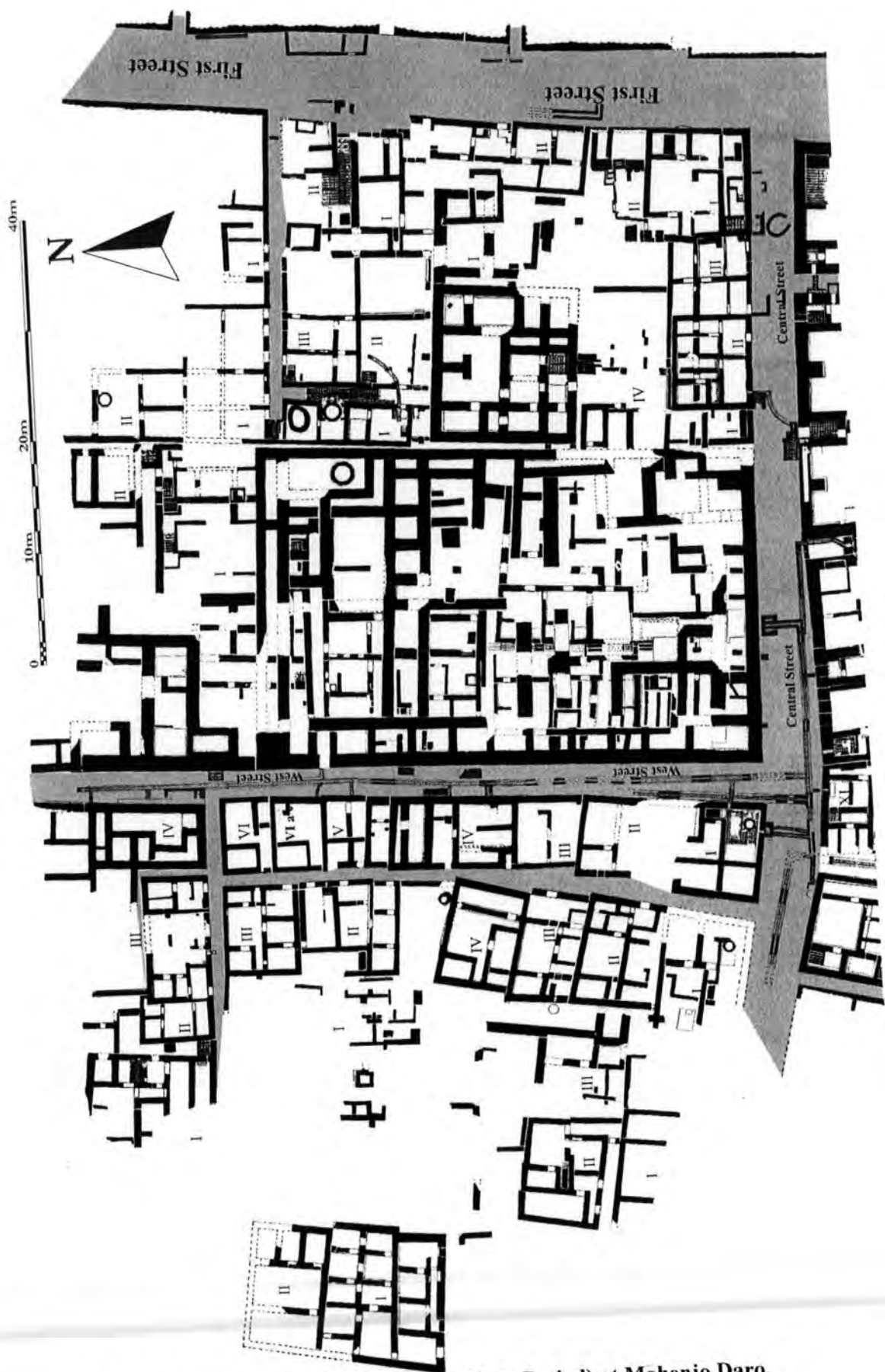


Fig. 3.12. Plan of the DK-G (N) area (Late Period) at Mohenjo Daro.

Fig. 3.13. Plan of the HR area at Mohenjo Daro.



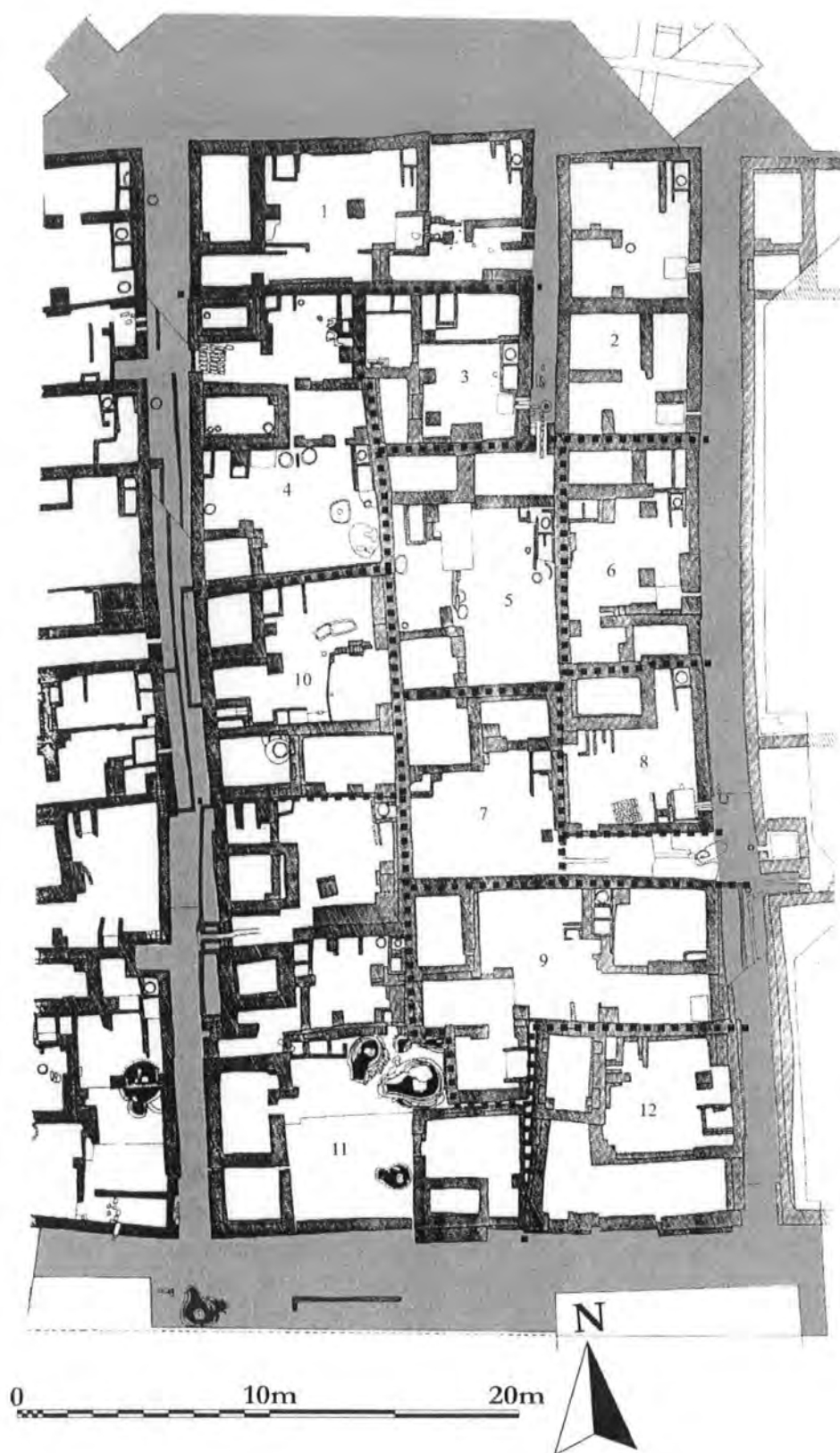


Fig. 3.16. Plan of Block 2 at Nausharo.

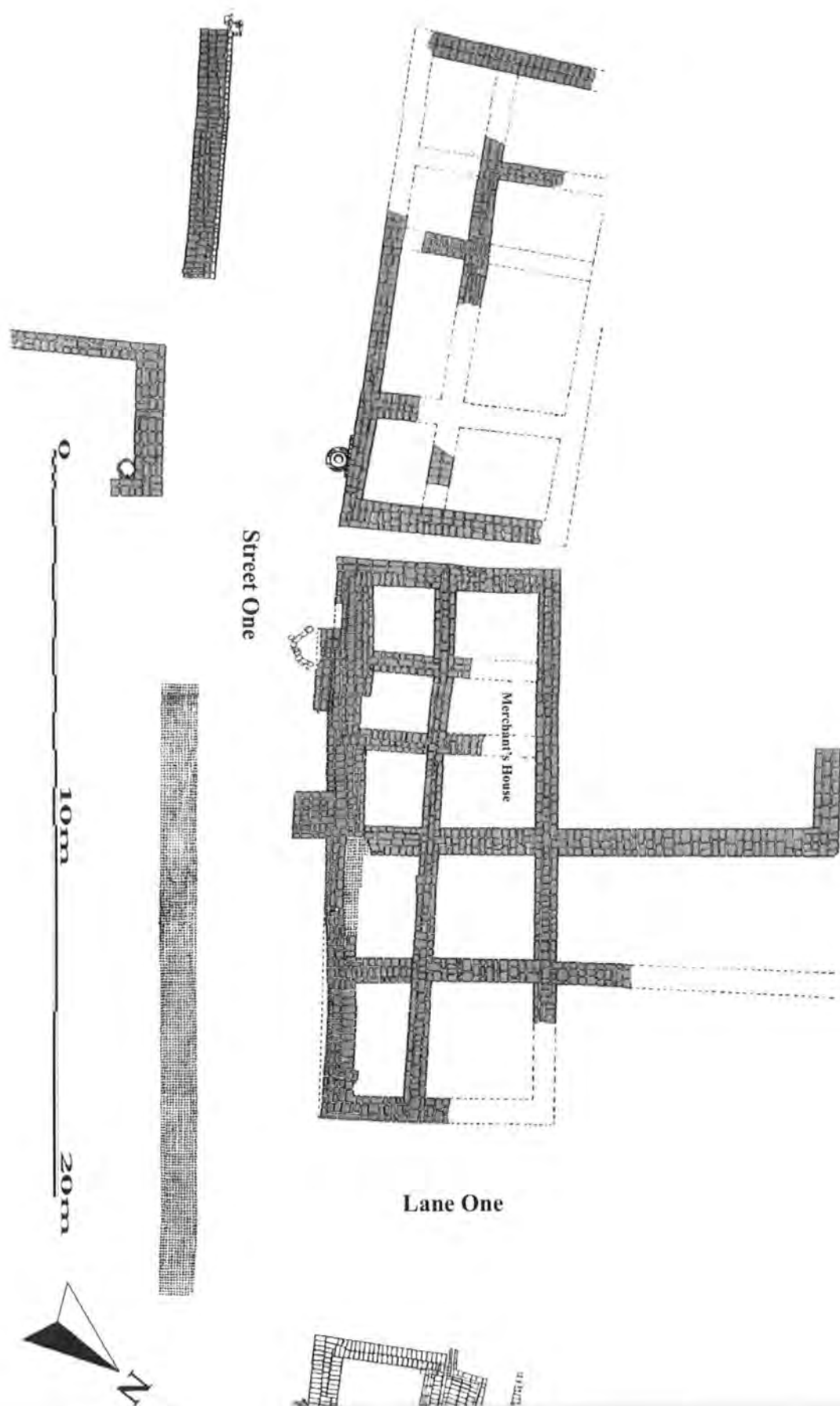


Fig. 3.17.

Plan of the 'merchant's house' at Lothal.

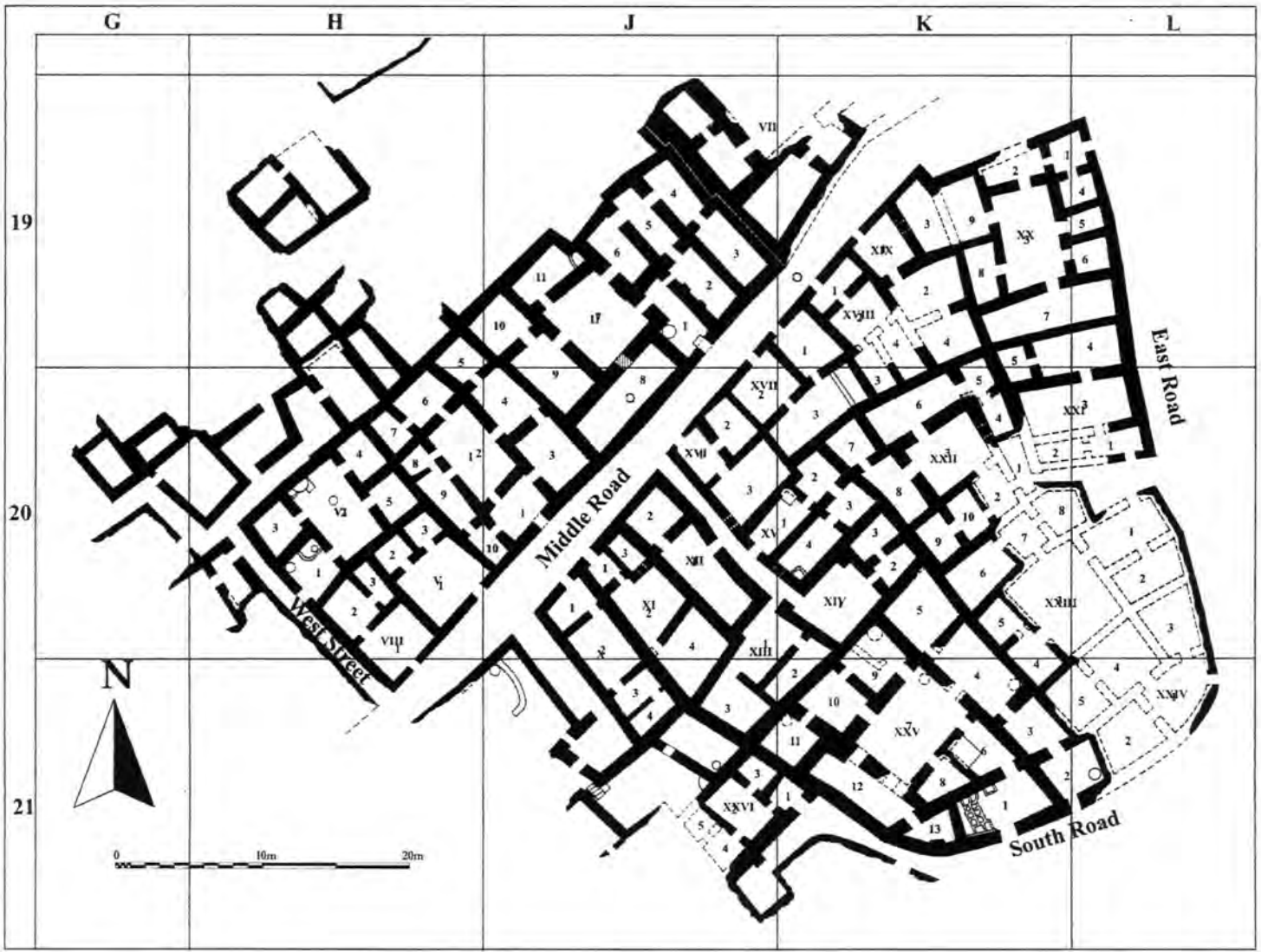


Fig. 3.18. Plan of levels Va at Asmar.

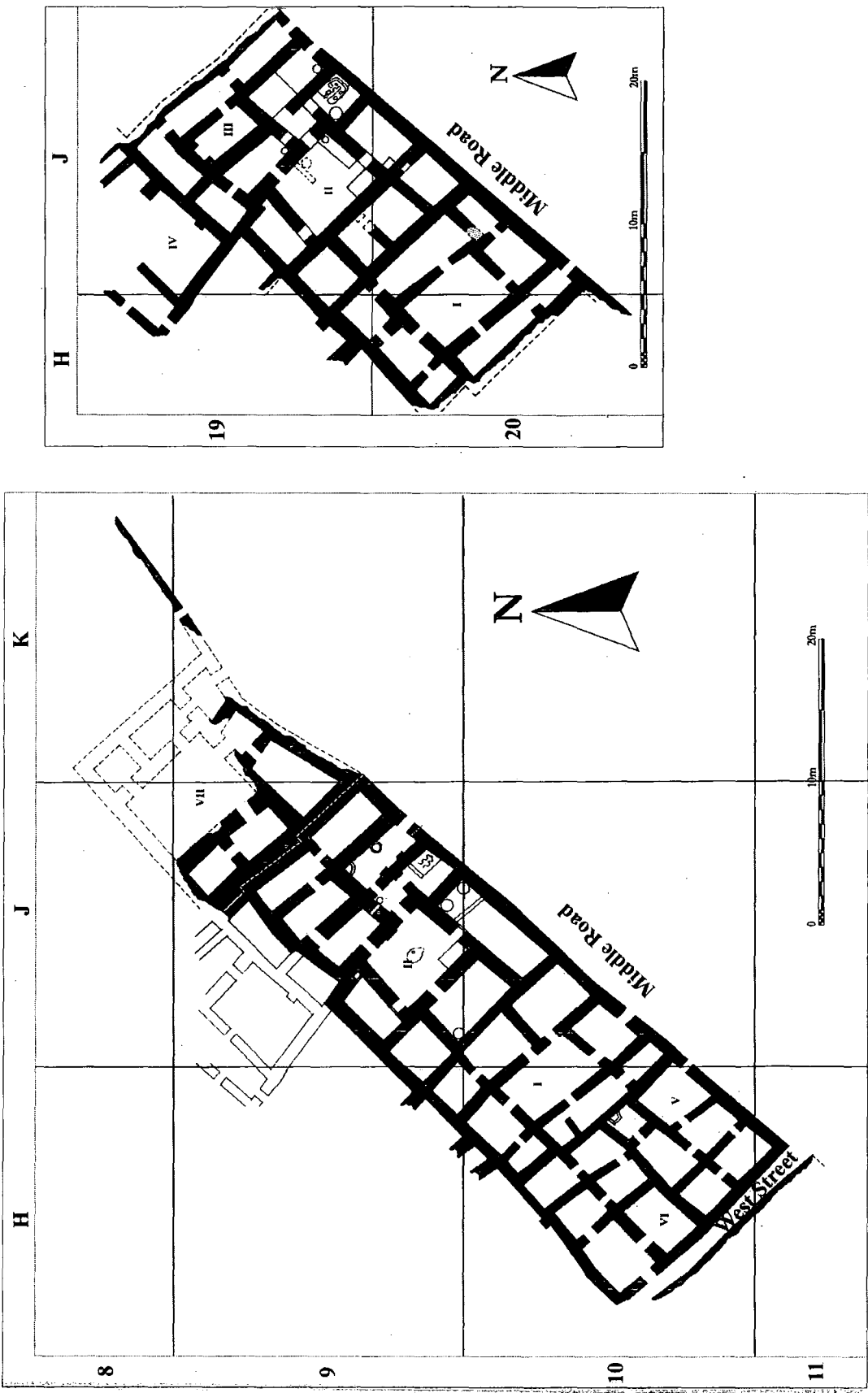


Fig. 3.19. Plan of levels Vb (left) and Vc (right) at Asmar.

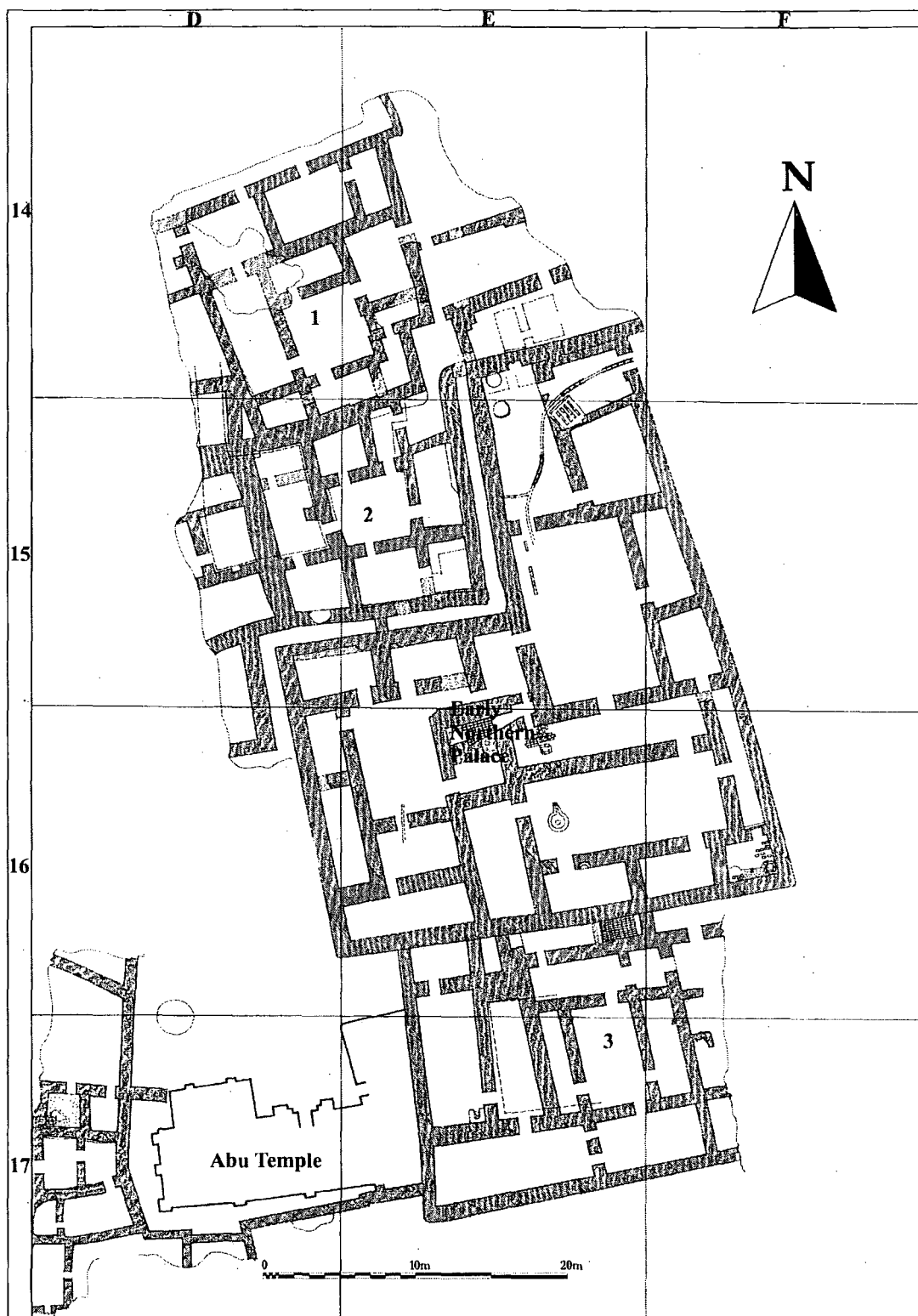


Fig. 3.20. Plan of the 'palace' area at Asmar.

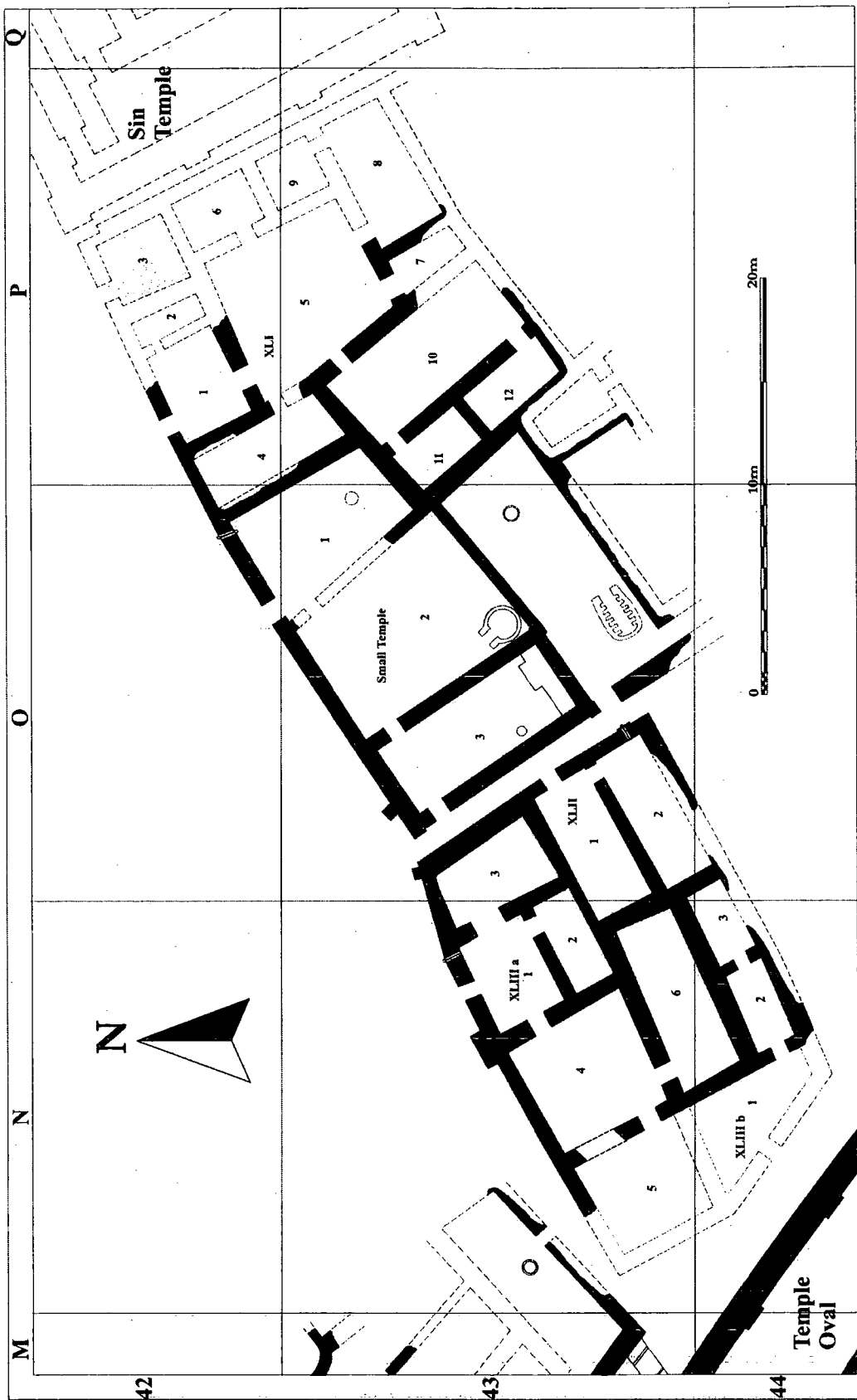


Fig. 3.21. Plan of 'Houses 3' at Khafajah.

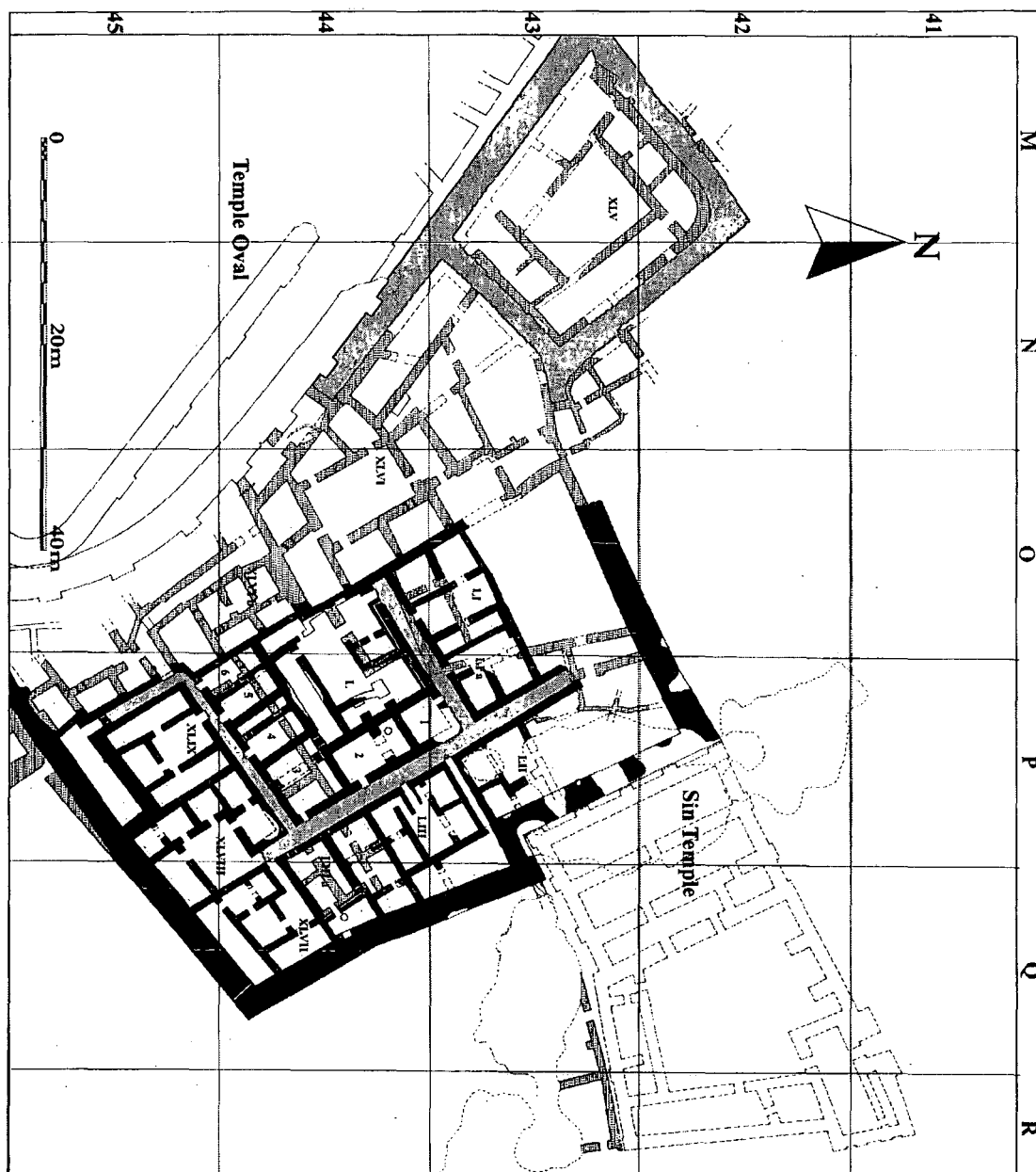


Fig. 3.22. Plan of 'Houses 2' at Khafajah.

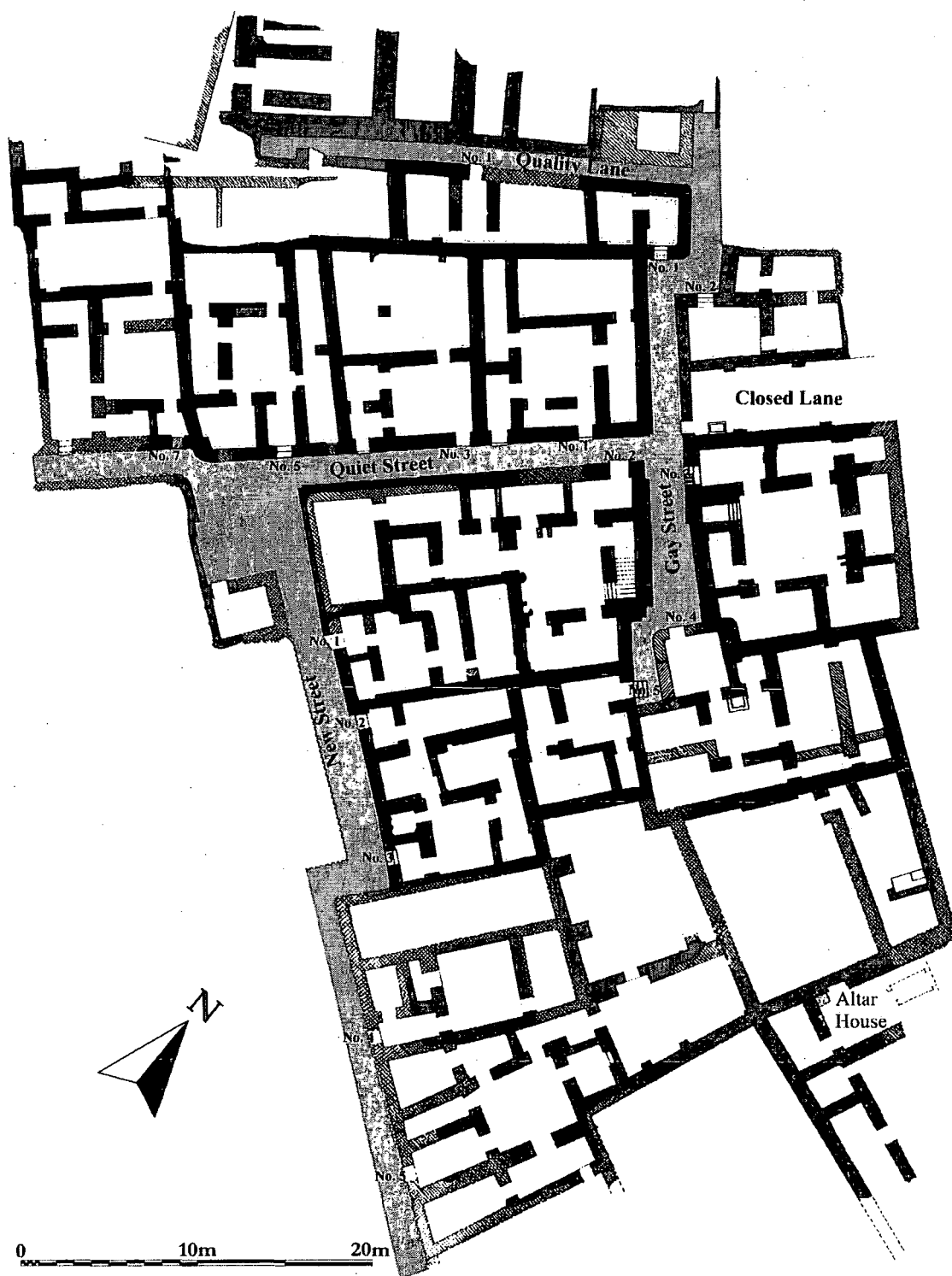


Fig. 3.24. Plan of the EM area at Ur.

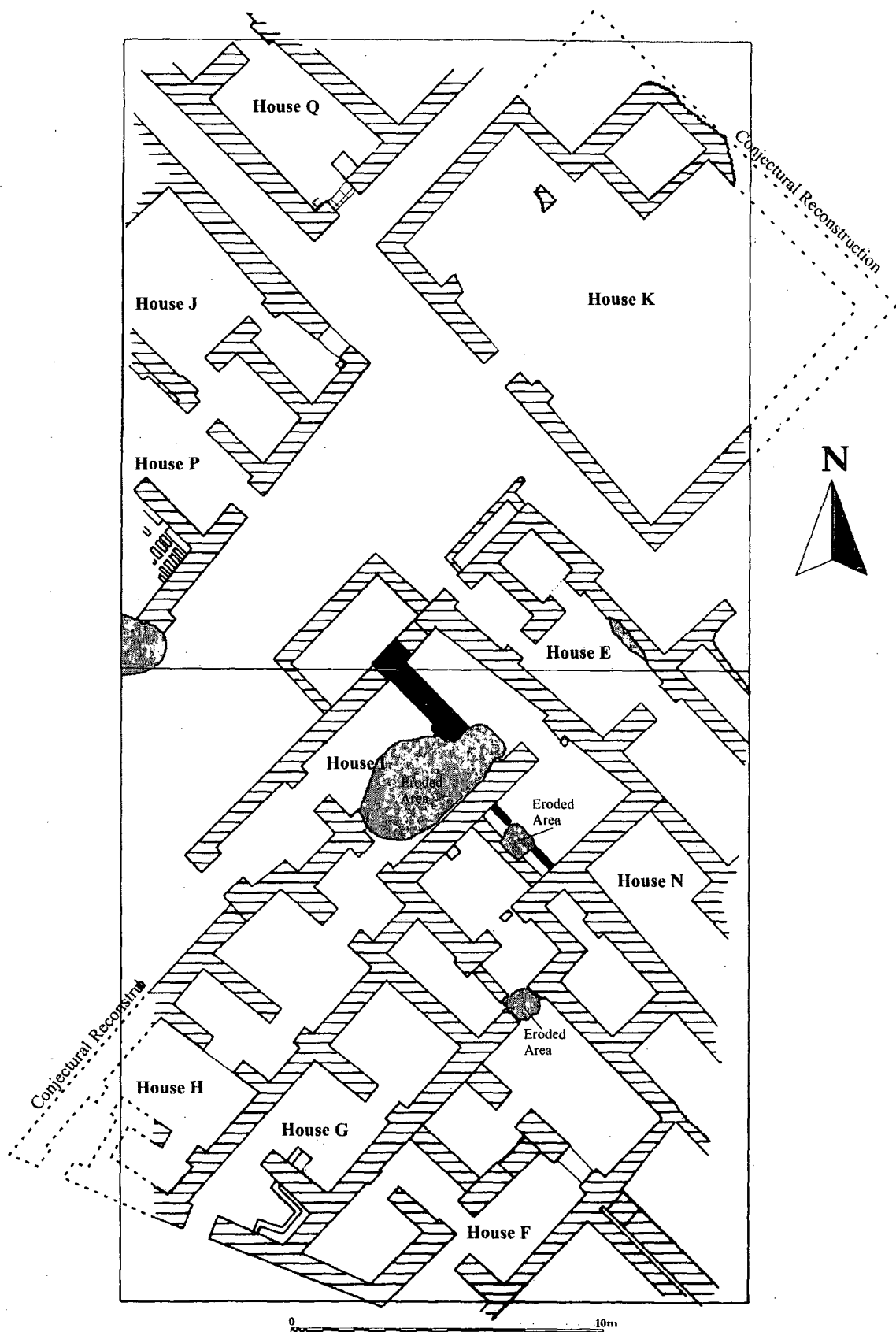


Fig. 3.25. Plan of the TA area at Nippur.

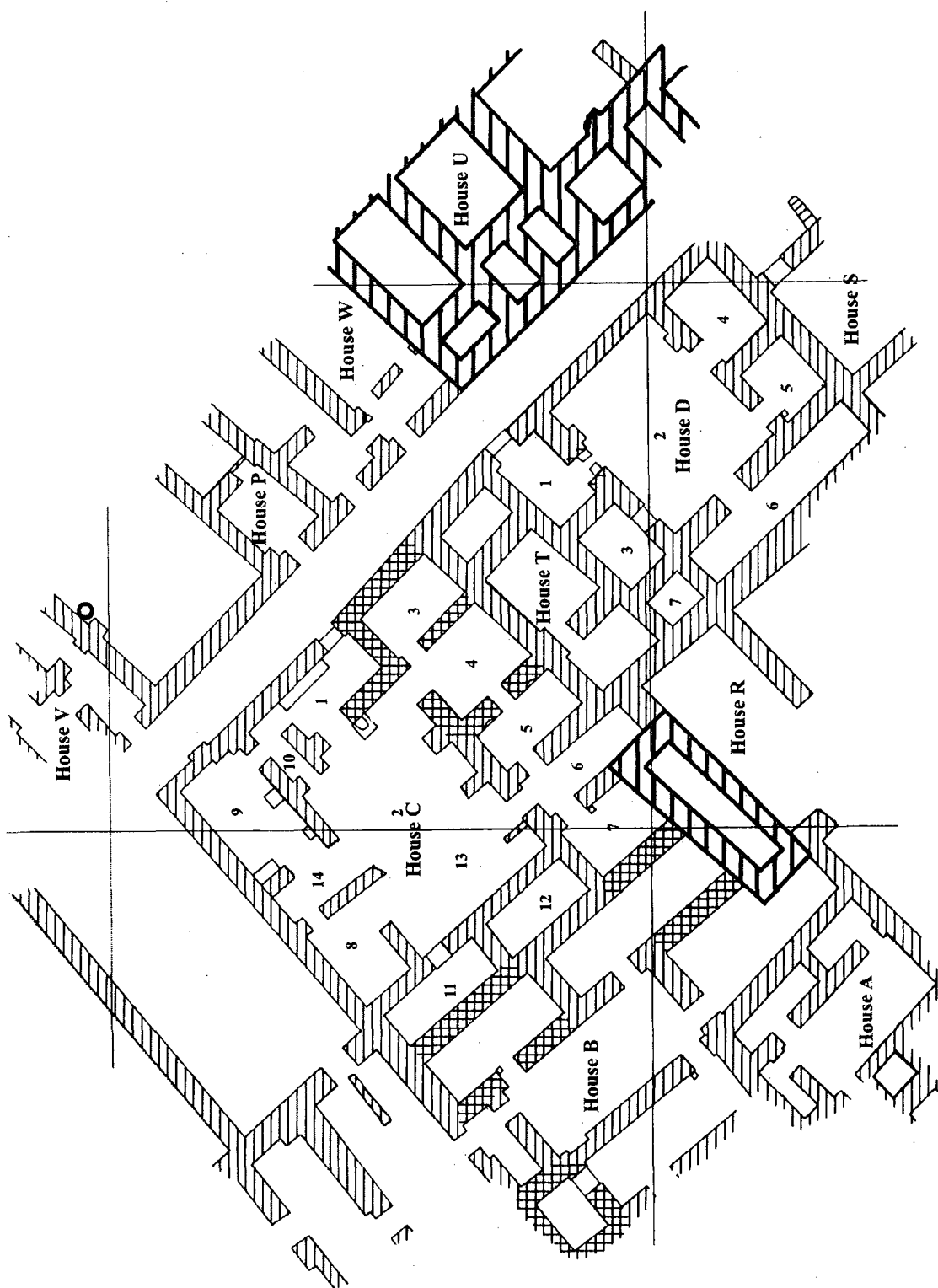


Fig. 3.26. Plan of the TB area at Nippur.

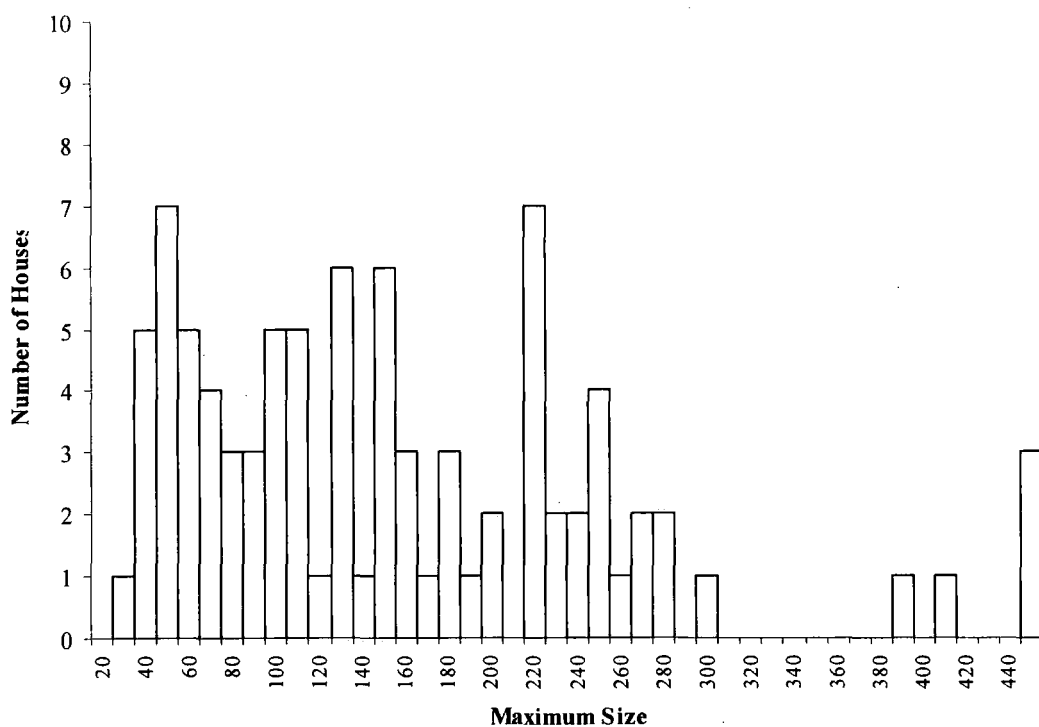


Fig. 3.27. Building sizes at Mohenjo Daro (HR, VS, DK-G and Moneer areas).

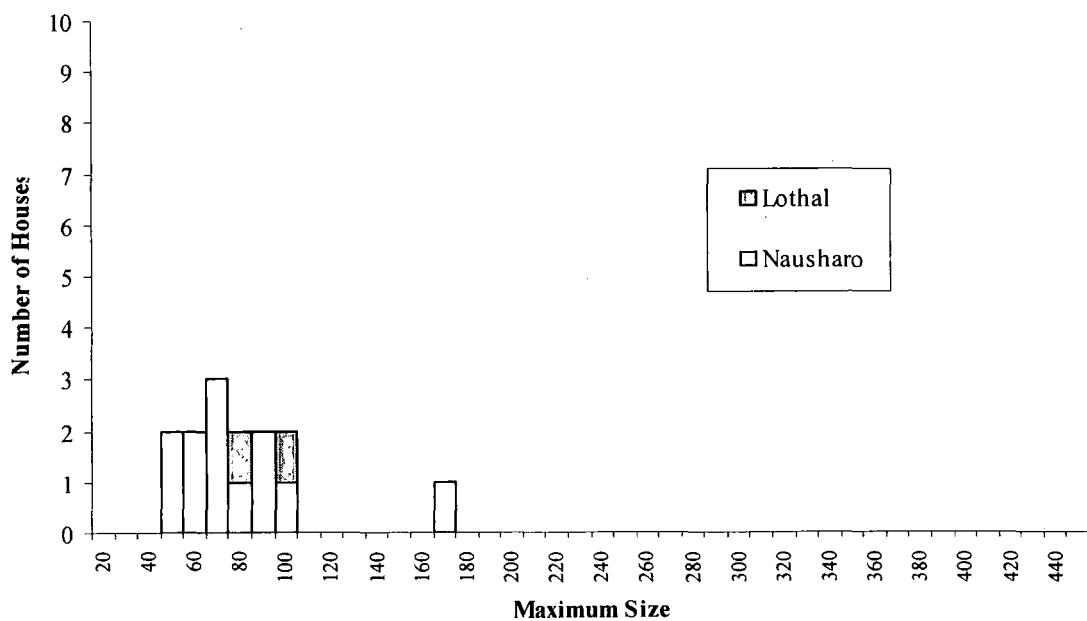


Fig. 3.28. Building sizes at Nausharo Block 2 and Lothal 'A' Block.

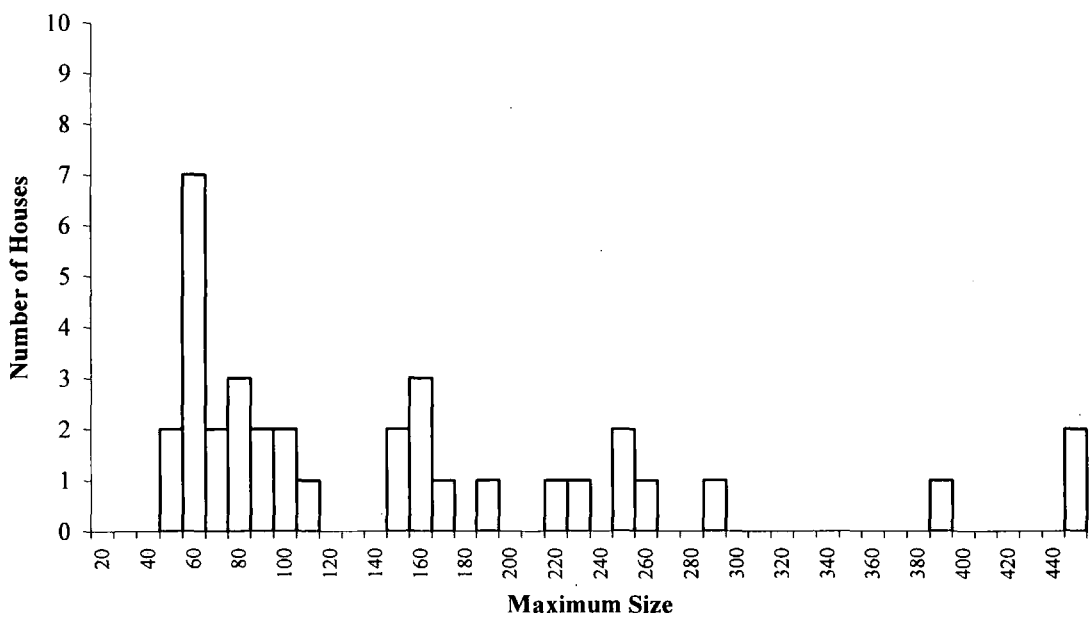


Fig. 3.29. Building Sizes at Asmar levels Va to Vc.

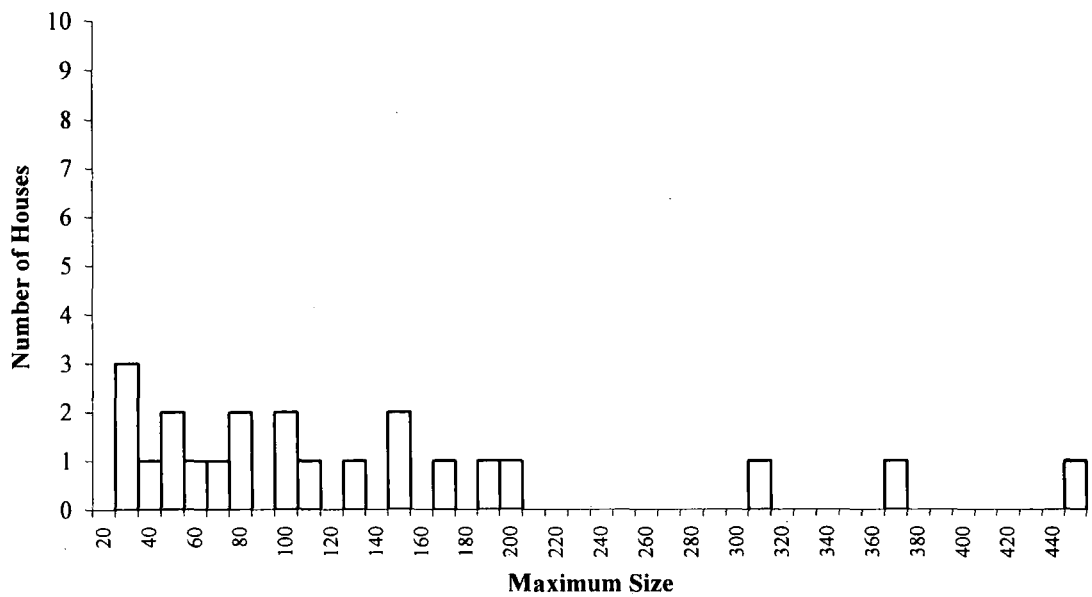


Fig. 3.30. Building sizes at Khafajah 'Houses 2' to 'Houses 3'.

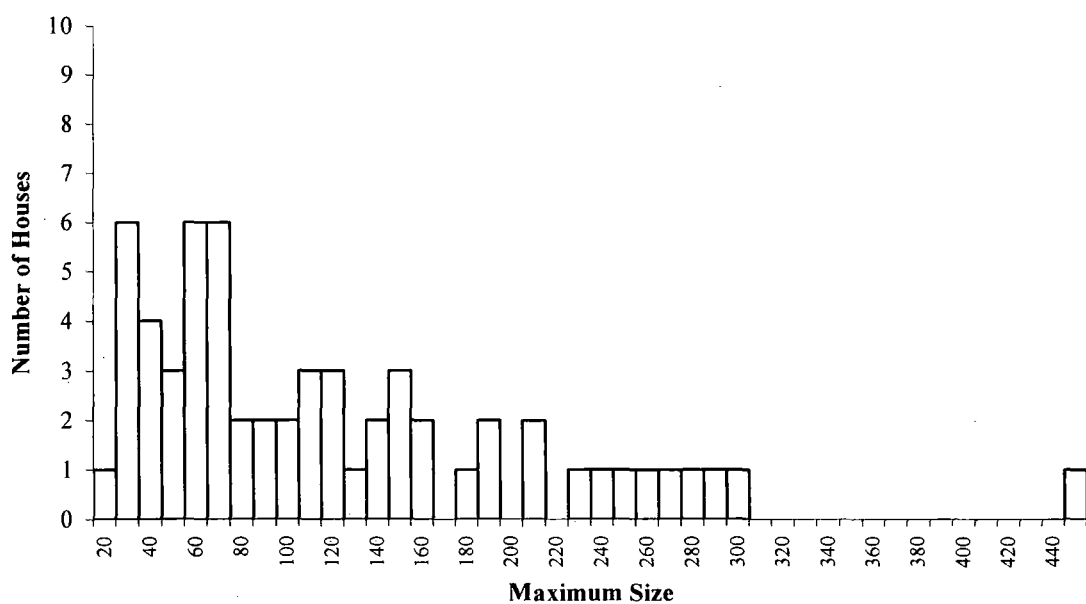


Fig. 3.31. Building sizes at Ur, areas AH and EM.

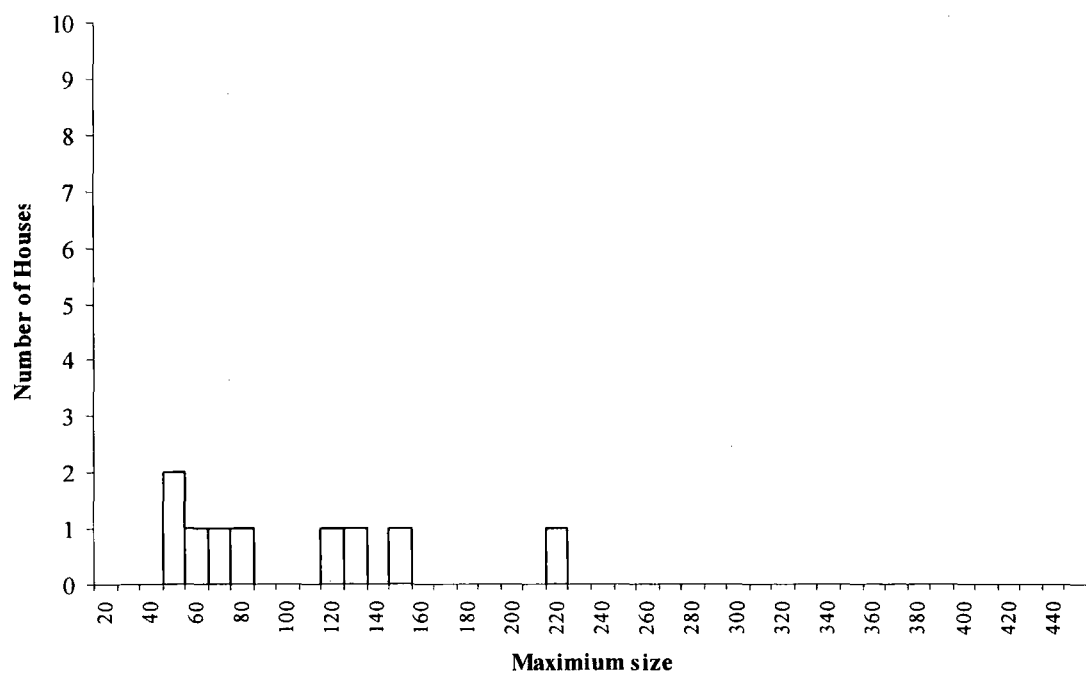


Fig. 3.32. Building sizes at Nippur, areas TA and TB.

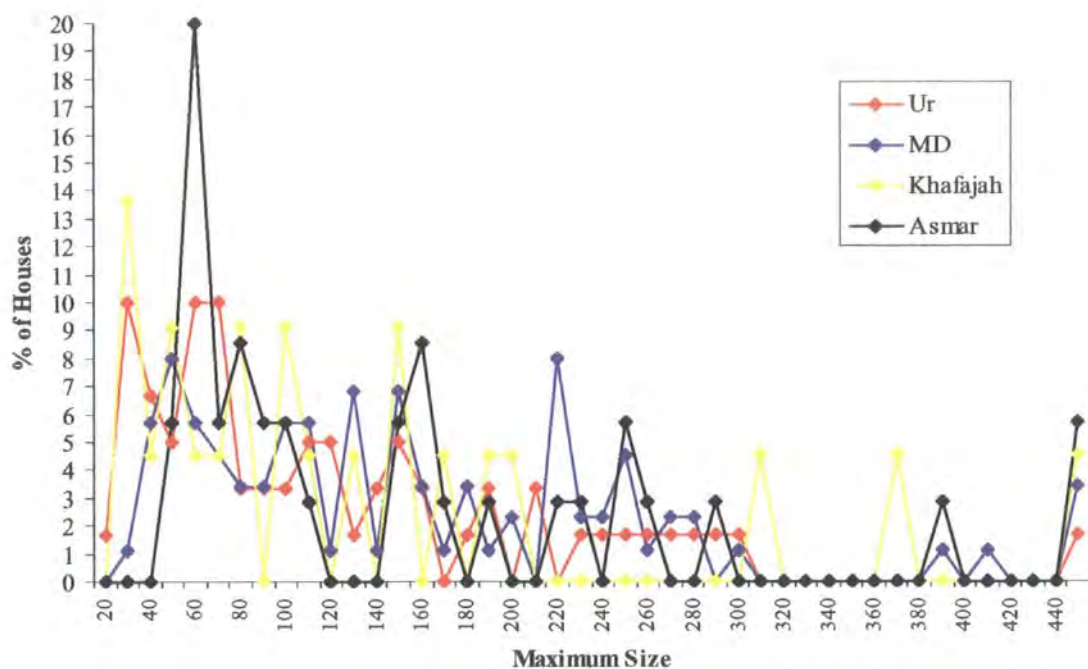


Fig. 3.33. Comparison of house sizes (as percentage of total site population) at Mohenjo Daro, Ur, Khafajah and Asmar.

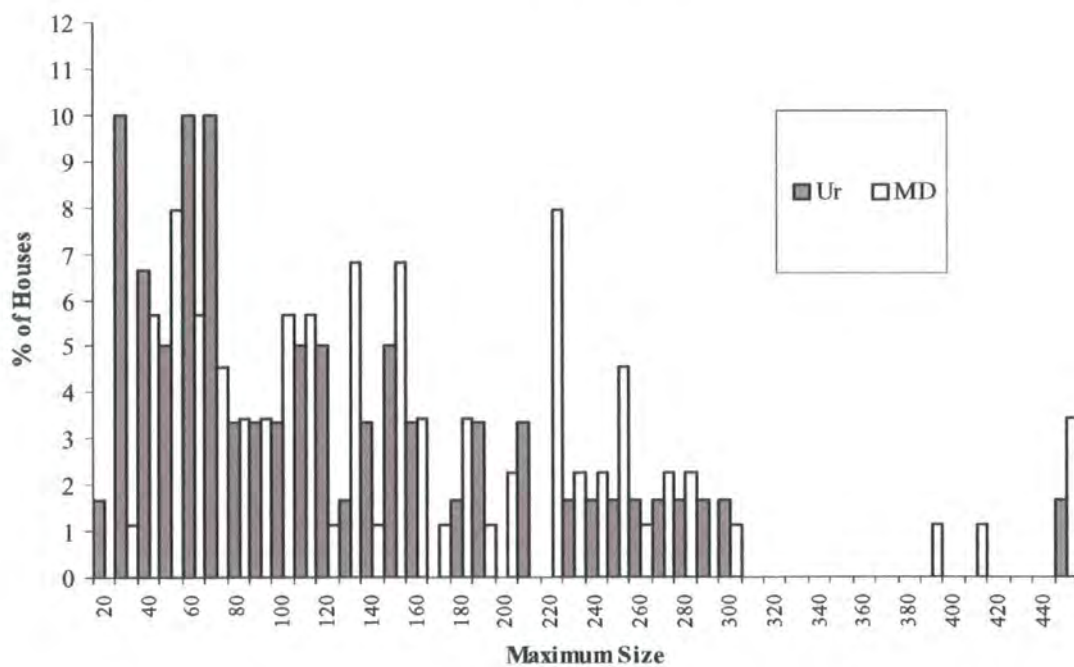


Fig. 3.34. Comparison of house sizes at Mohenjo Daro and Ur (as percentage of total houses at each site).

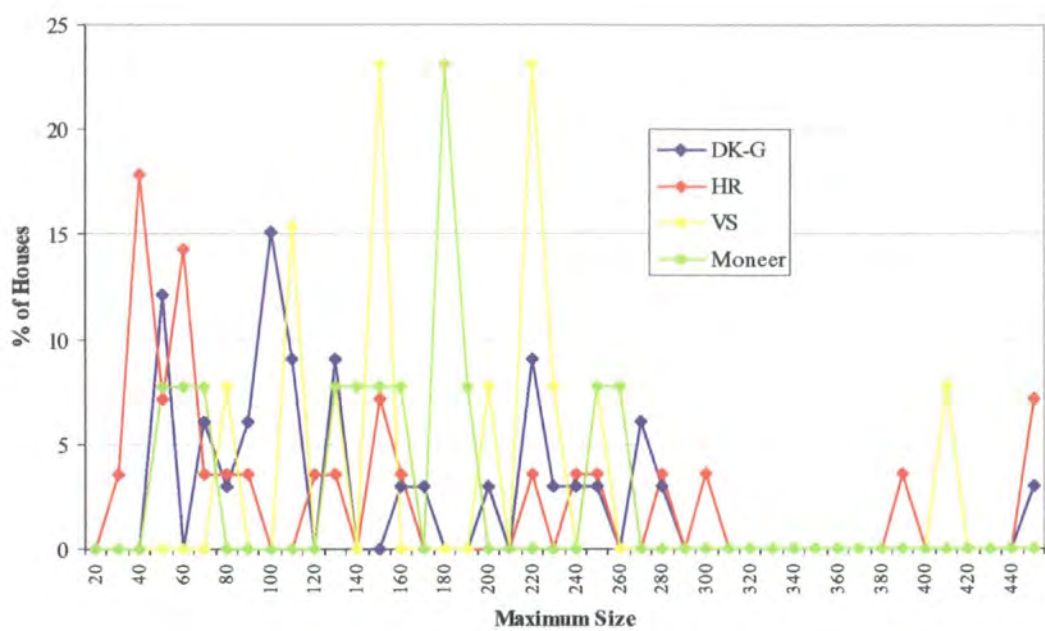


Fig. 3.35. Different areas of Mohenjo Daro compared.

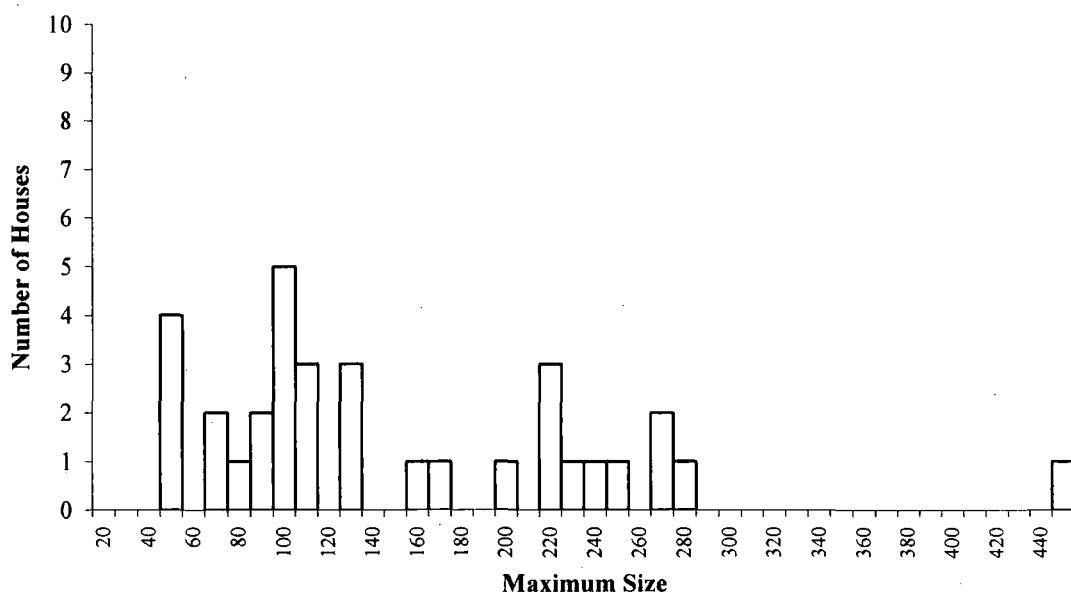


Fig. 3.36. House sizes at Mohenjo Daro, DK-G (N & S).

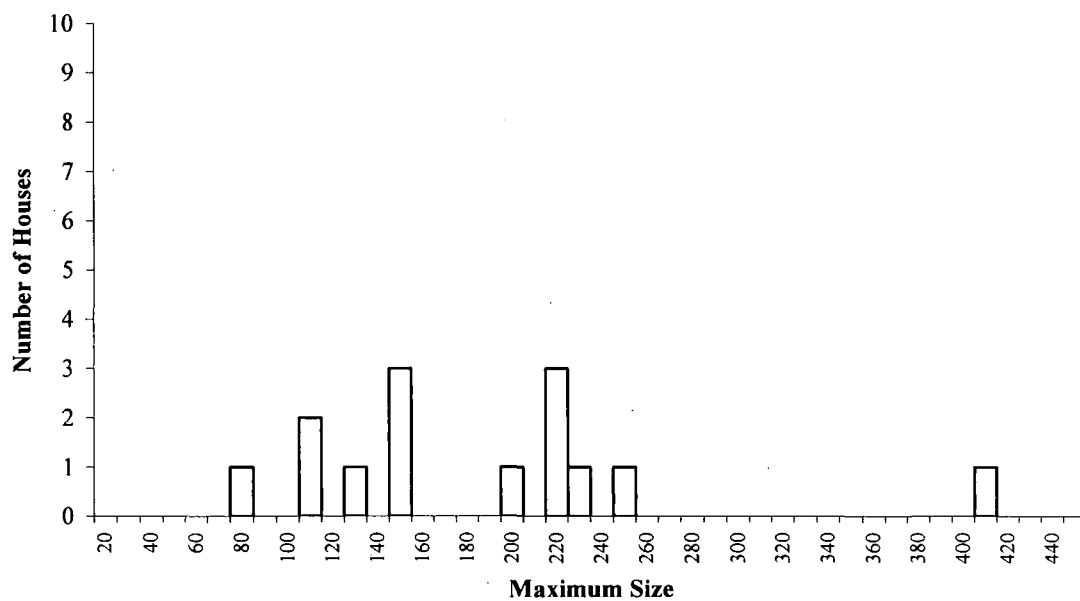


Fig. 3.37. House sizes at Mohenjo Daro, VS-A and VS-B.

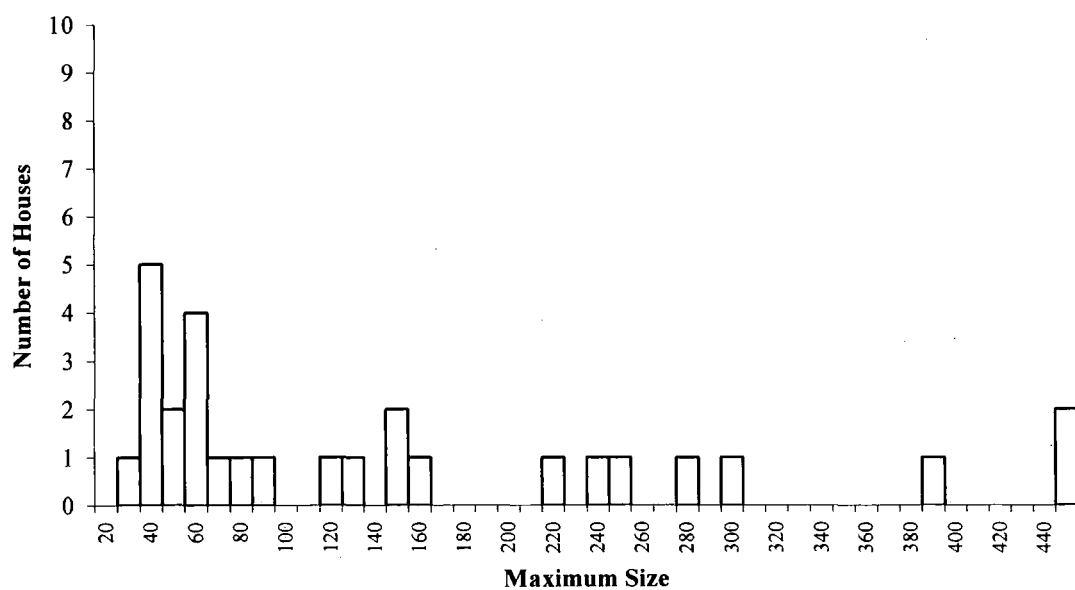


Fig. 3.38. House sizes at Mohenjo Daro, HR-A and HR-B.

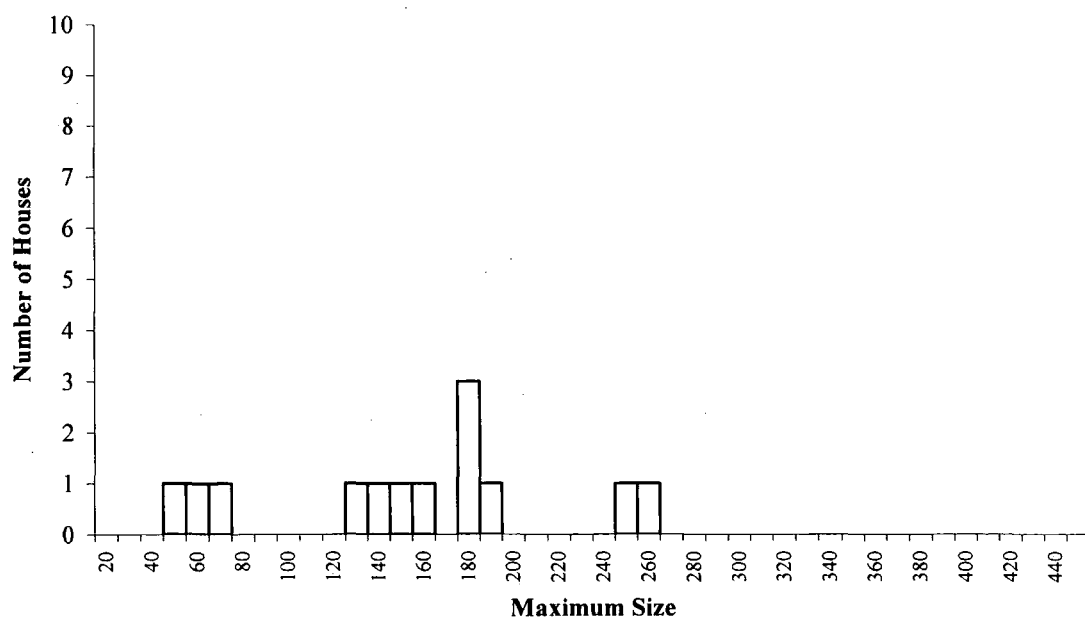


Fig. 3.39. House sizes at Mohenjo Daro, Moneer Area.

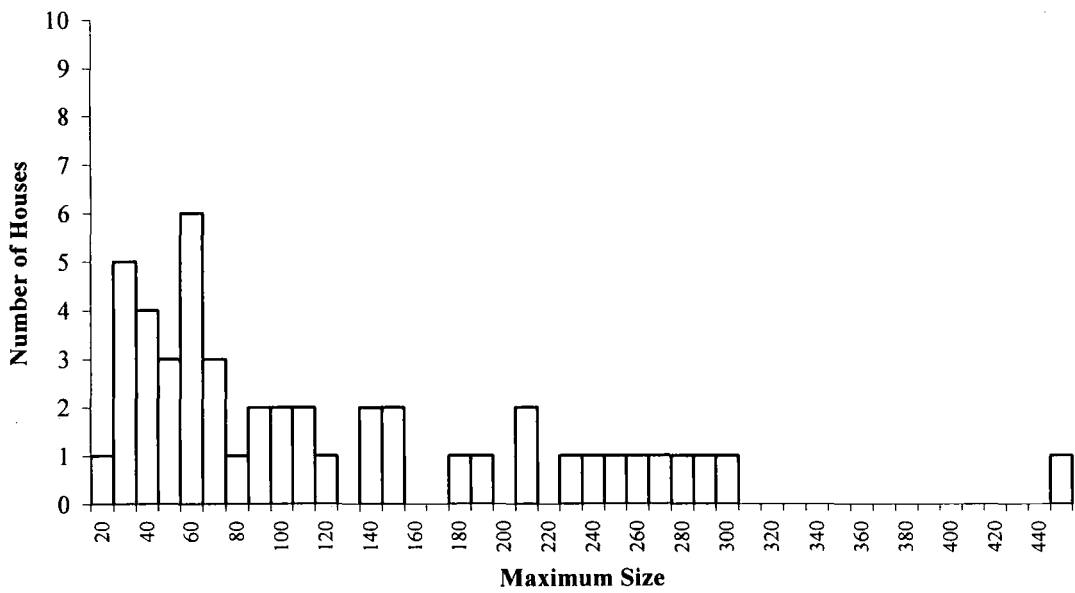


Fig. 3.40. House sizes at Ur, area AH.

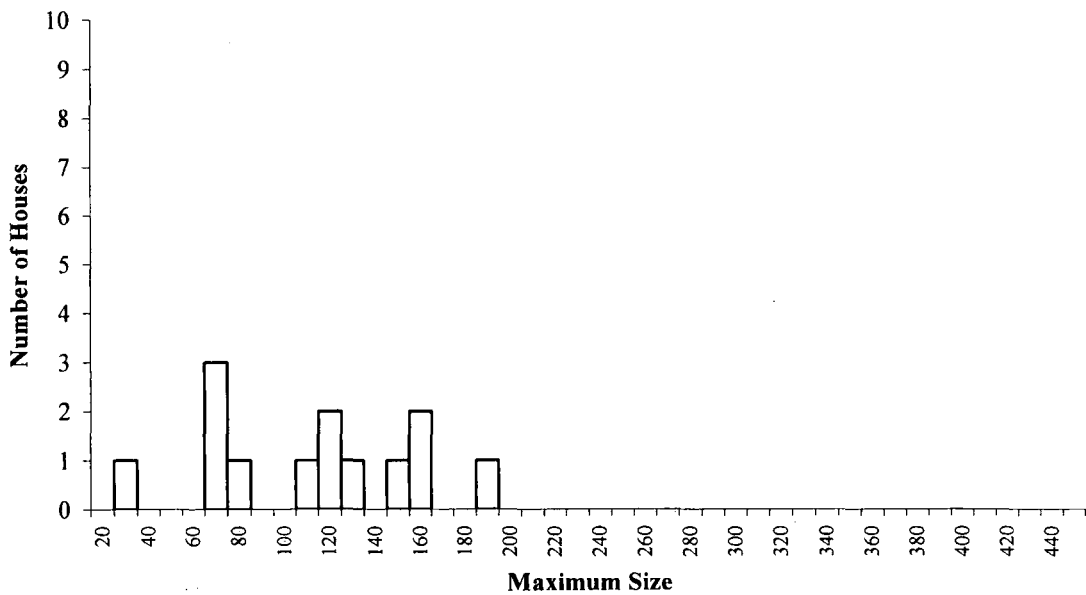


Fig. 3.41. House sizes at Ur, area EM.

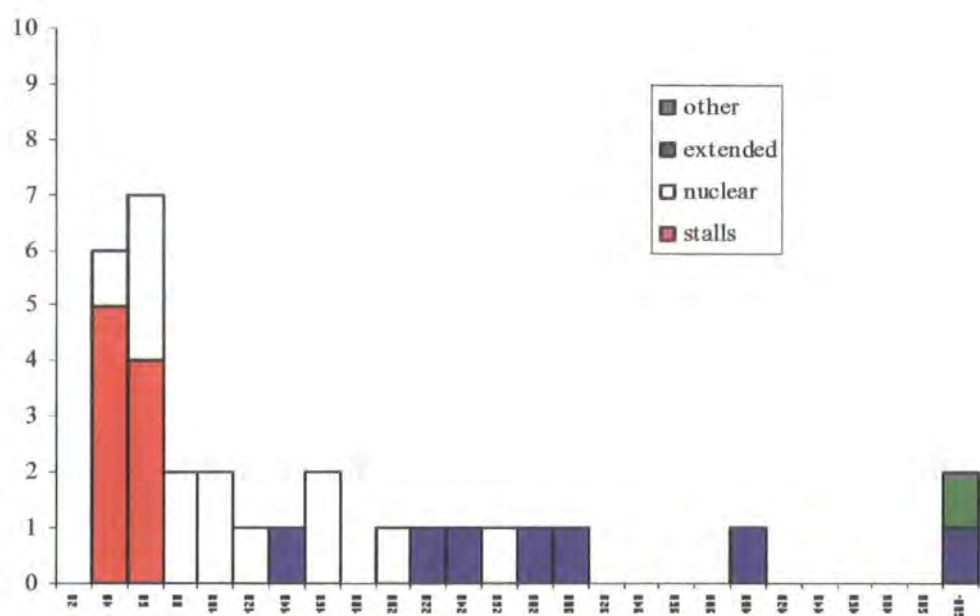


Fig. 3.42. Size distribution of building types at Mohenjo Daro, HR area.

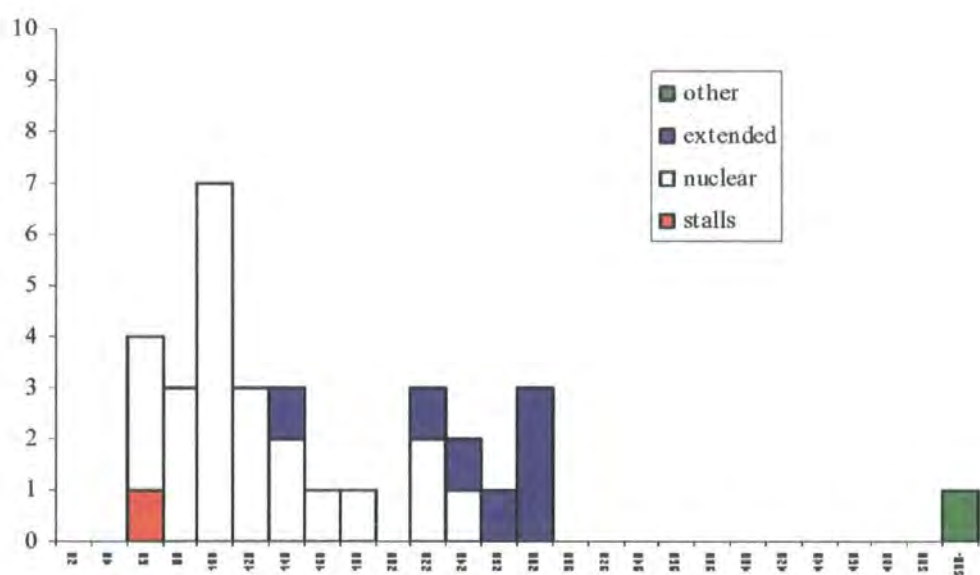


Fig. 3.43. Size distribution of building types at Mohenjo Daro, DK-G area.

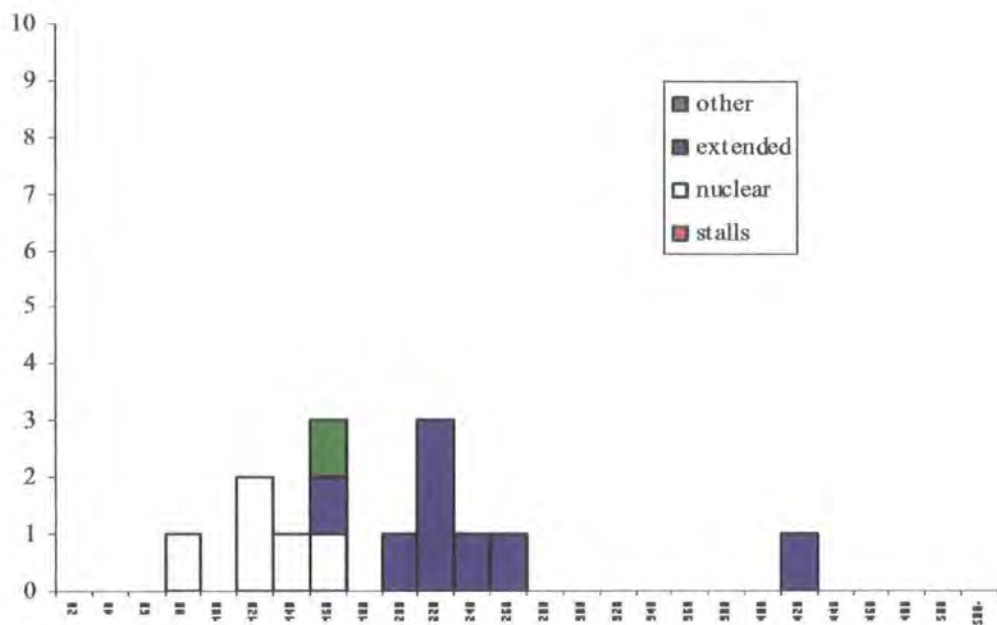


Fig. 3.44. Size distribution of building types at Mohenjo Daro, VS area.

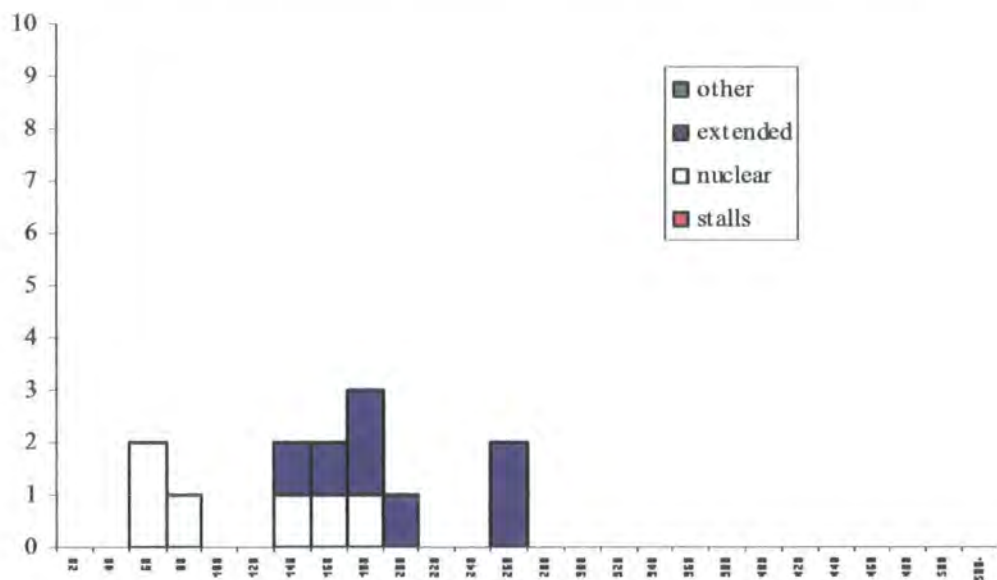


Fig. 3.45. Size distribution of building types at Mohenjo Daro, Moneer area.

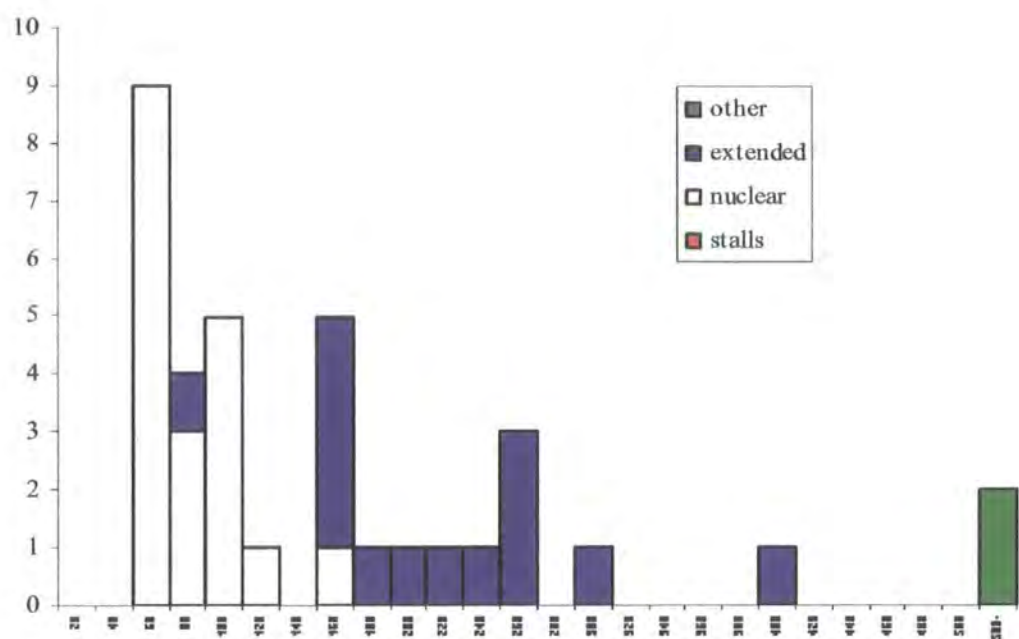


Fig. 3.46. Size distribution of building types at Asmar.

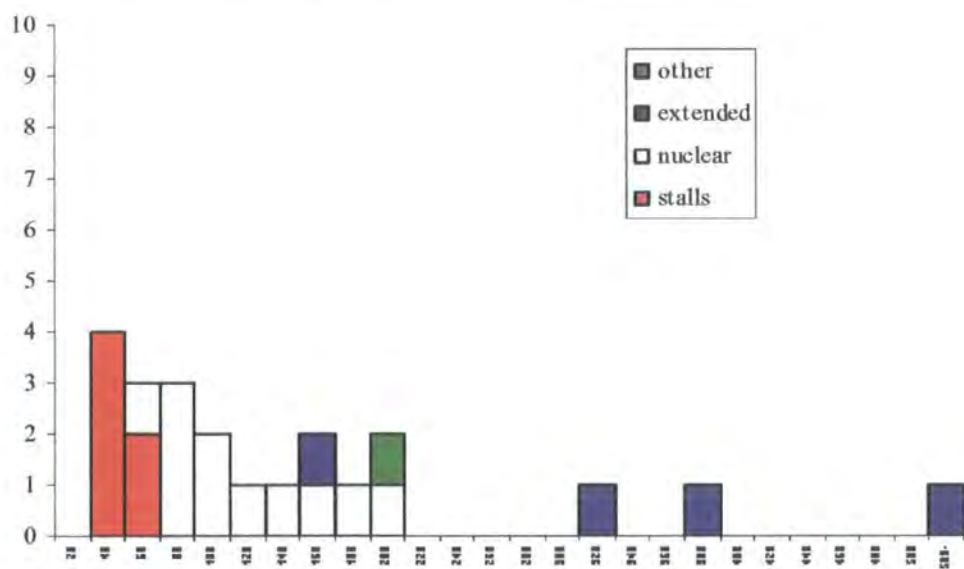


Fig. 3.47. Size distribution of building types at Khafajah.

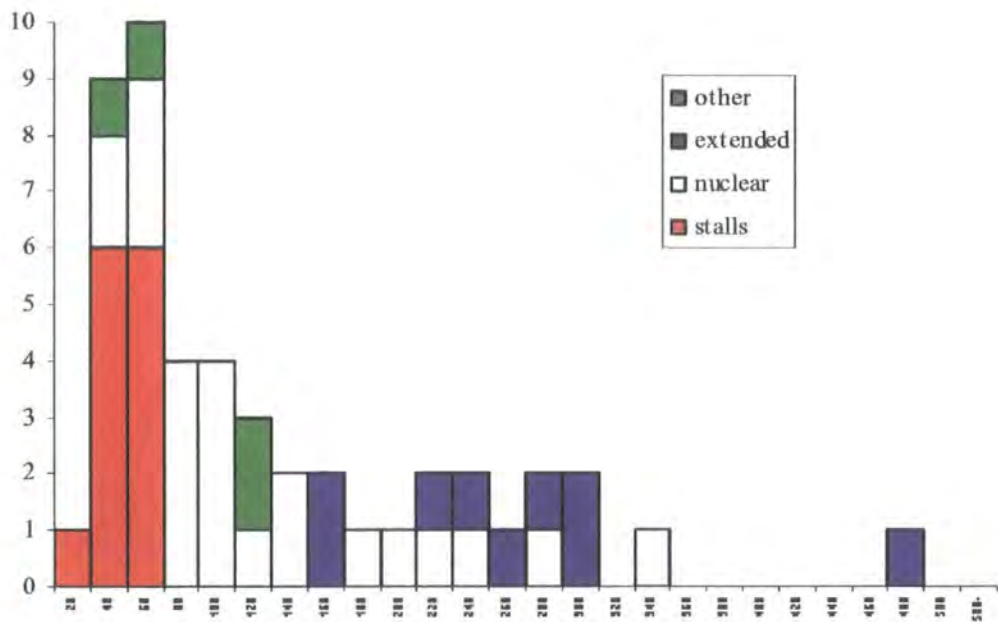


Fig. 3.48. Size distribution of building types at Ur, area AH.

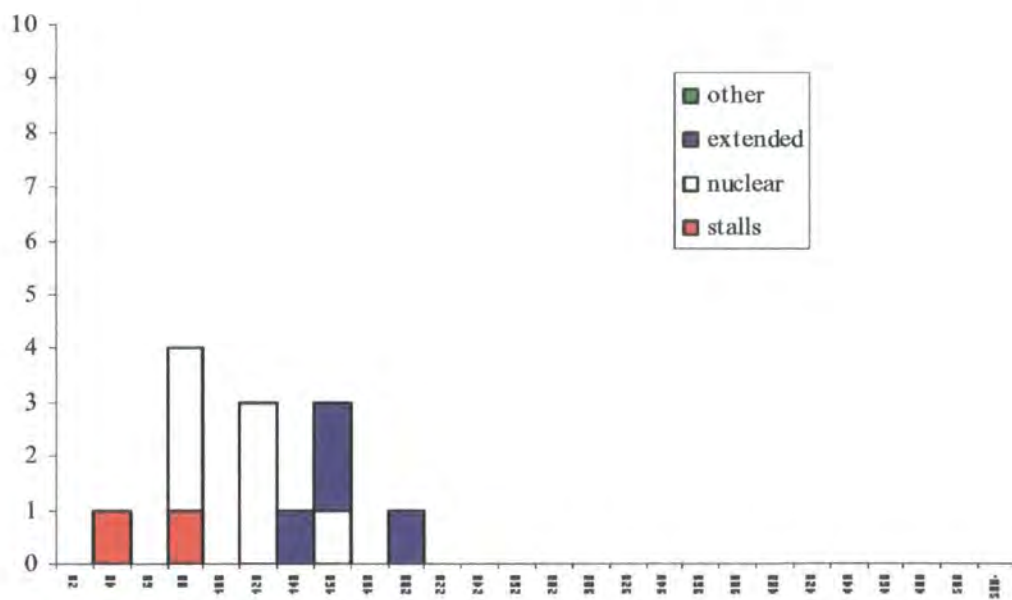


Fig. 3.49. Size distribution of building types at Ur, area EM.

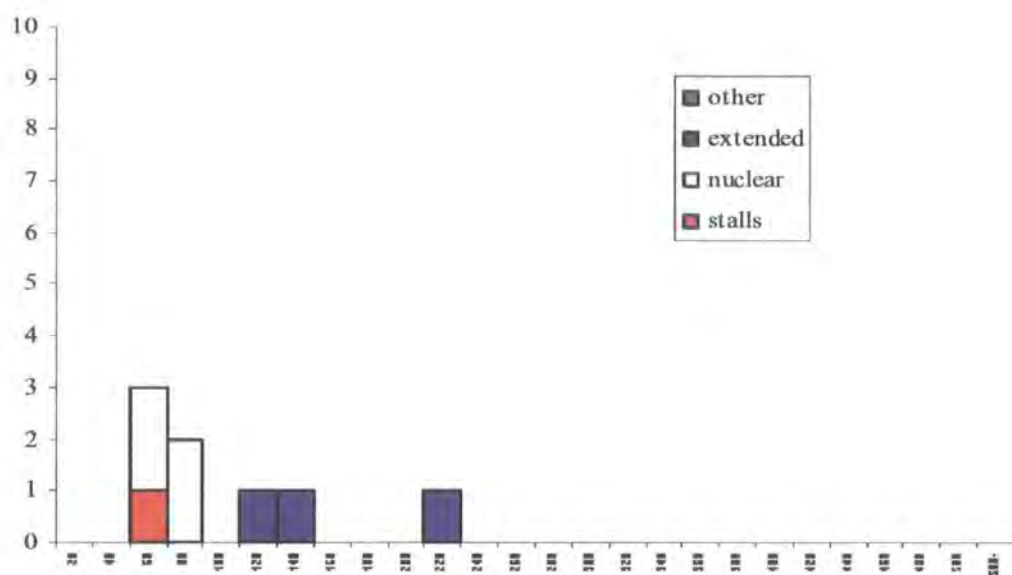


Fig. 3.50. Size distribution of building types at Nippur.

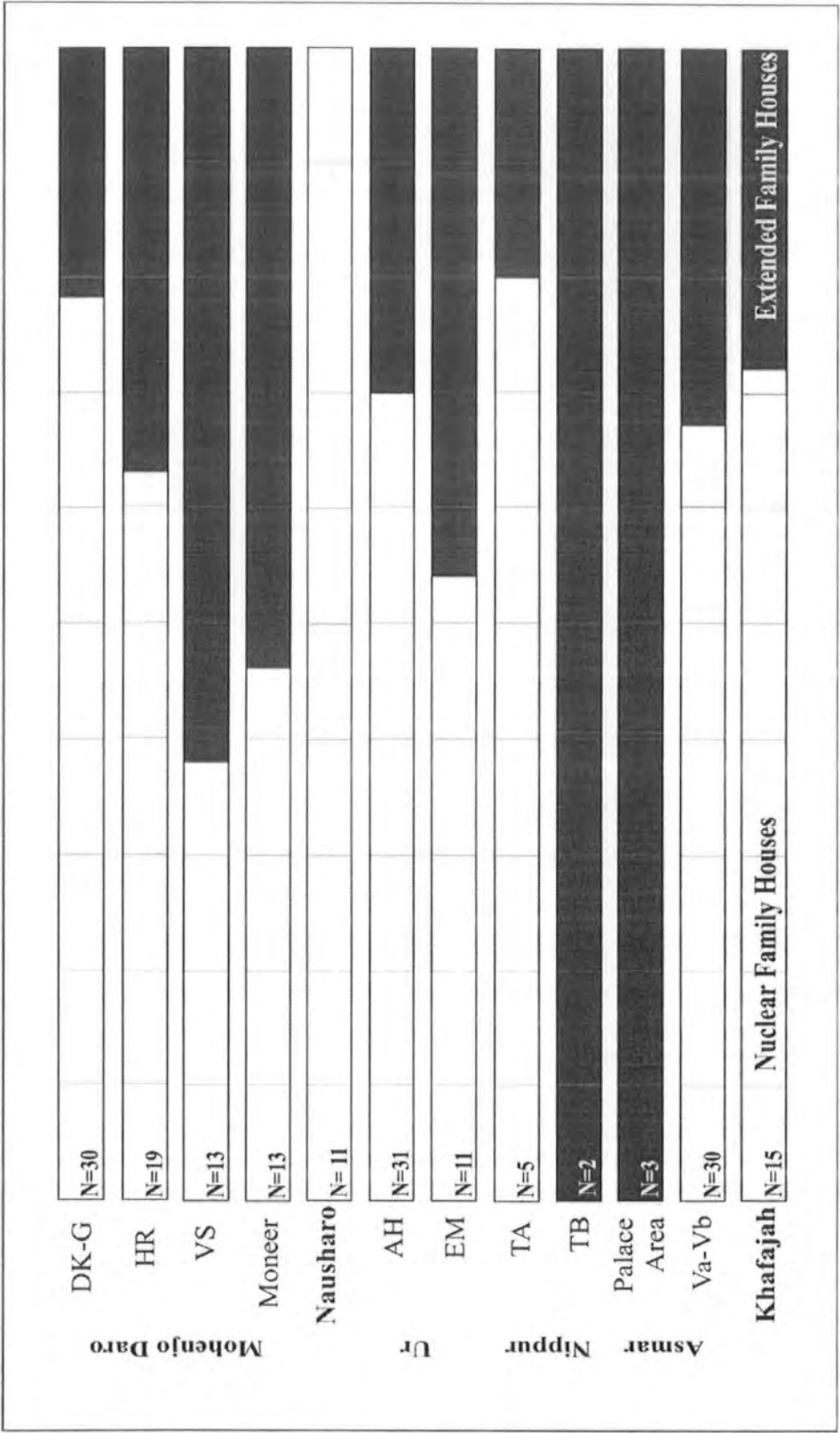


Fig. 3.51. The proportion of extended and nuclear family houses at various sites.



Fig. 3.52. Plan of the DK-G (S) area (Intermediate Period) at Mohenjo Daro, showing the location of building types.



Fig. 3.53. Plan of the DK-G (S) area (Late Period) at Mohenjo Daro, showing the location of building types.



Fig. 3.54.

Plan of the DK-G (N) area (Late Period) at Mohenjo Daro, showing the location of building types.



Fig. 3.55. Plan of the HR area at Mohenjo Daro, showing the location of building types.

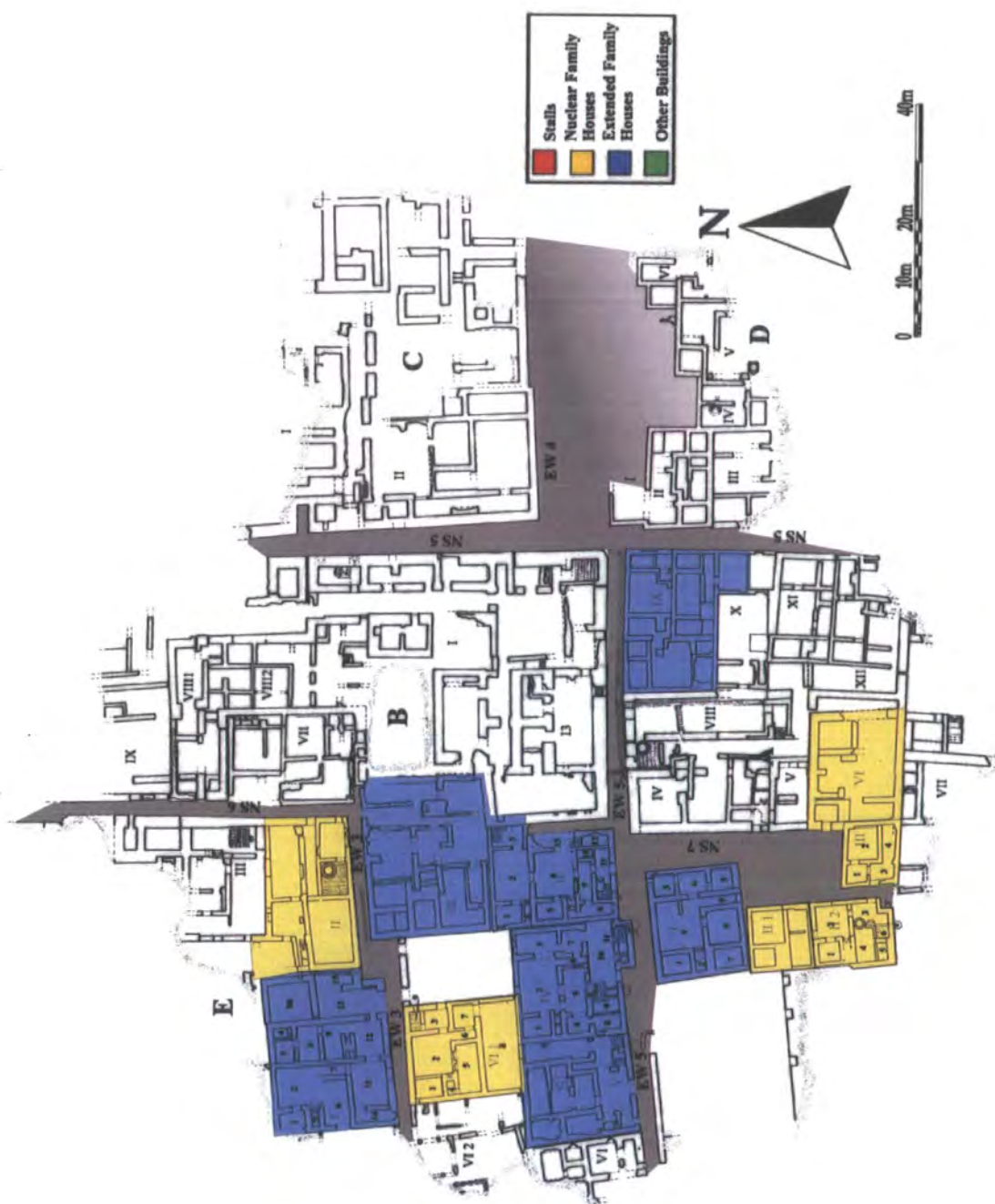


Fig. 3.56. Plan of the Moneer area at Mohenjo Daro, showing the location of building types.

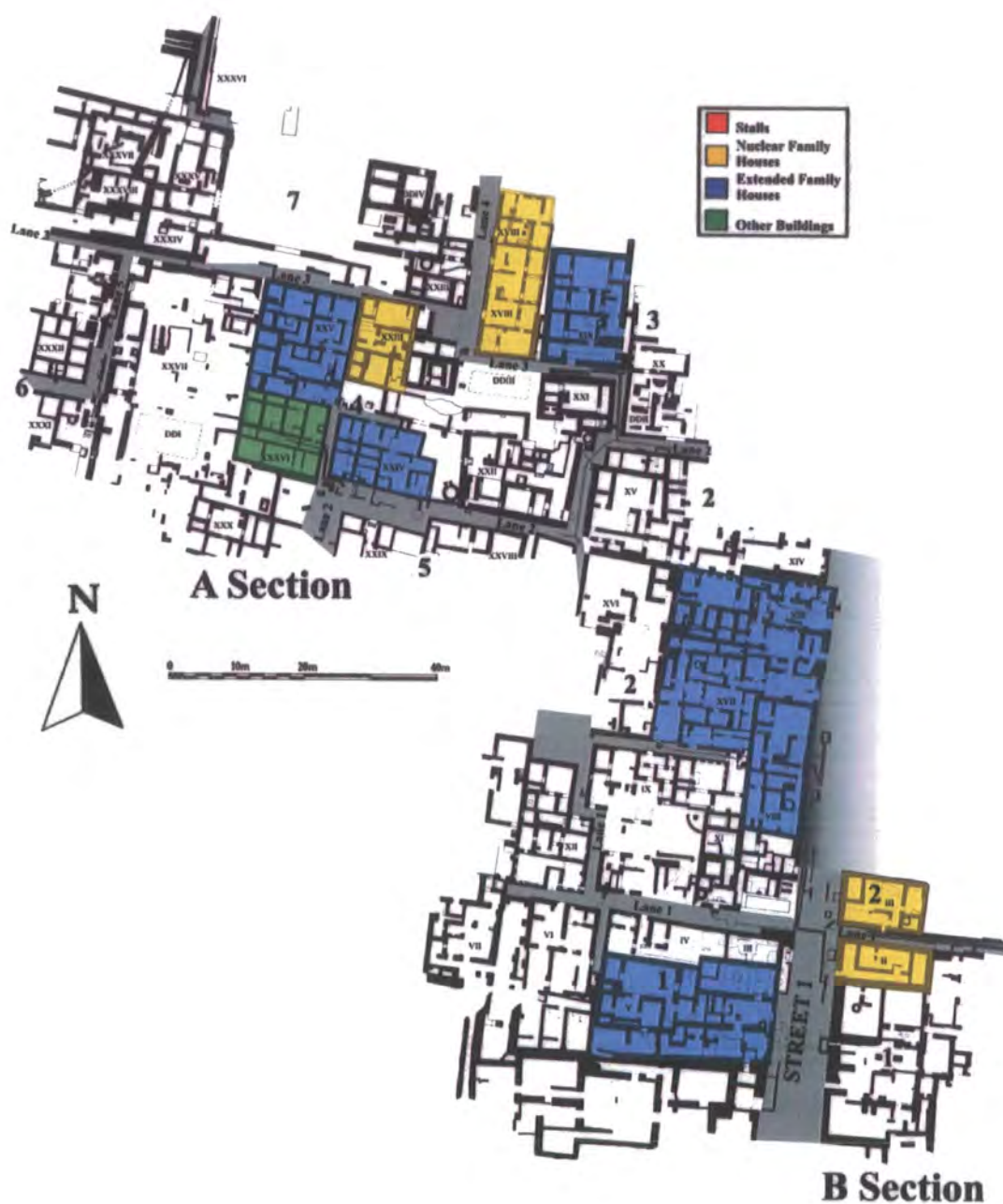


Fig. 3.57. Plan of the VS area at Mohenjo Daro, showing the location of building types.



Fig. 3.58. Plan of levels Va at Asmar, showing the location of building types.

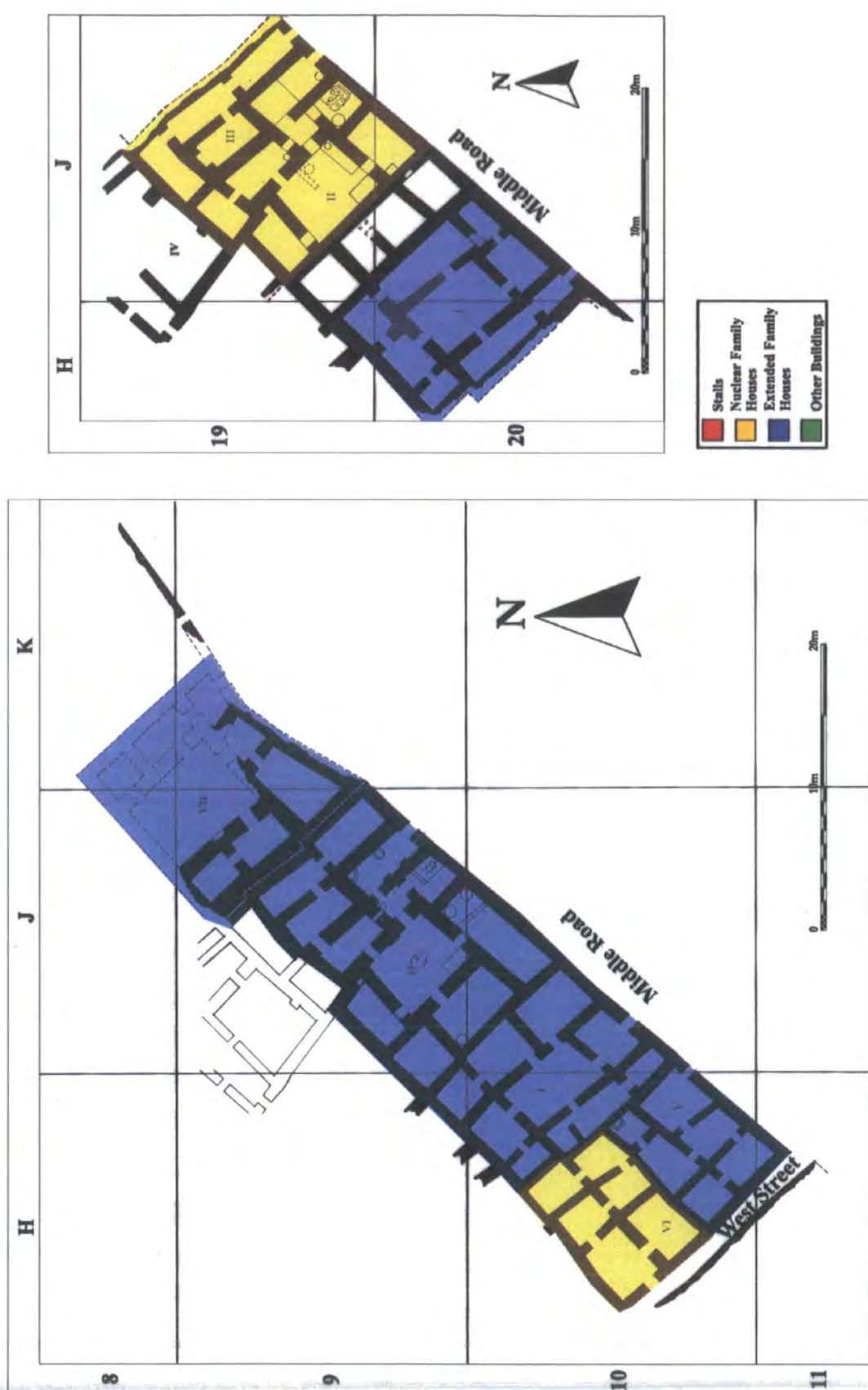


Fig. 3.59. Plan of levels Vb (left) and Vc (right) at Asmar, showing the location of building types.



Fig. 3.60. Plan of the 'palace' area at Asmar, showing the location of building types.

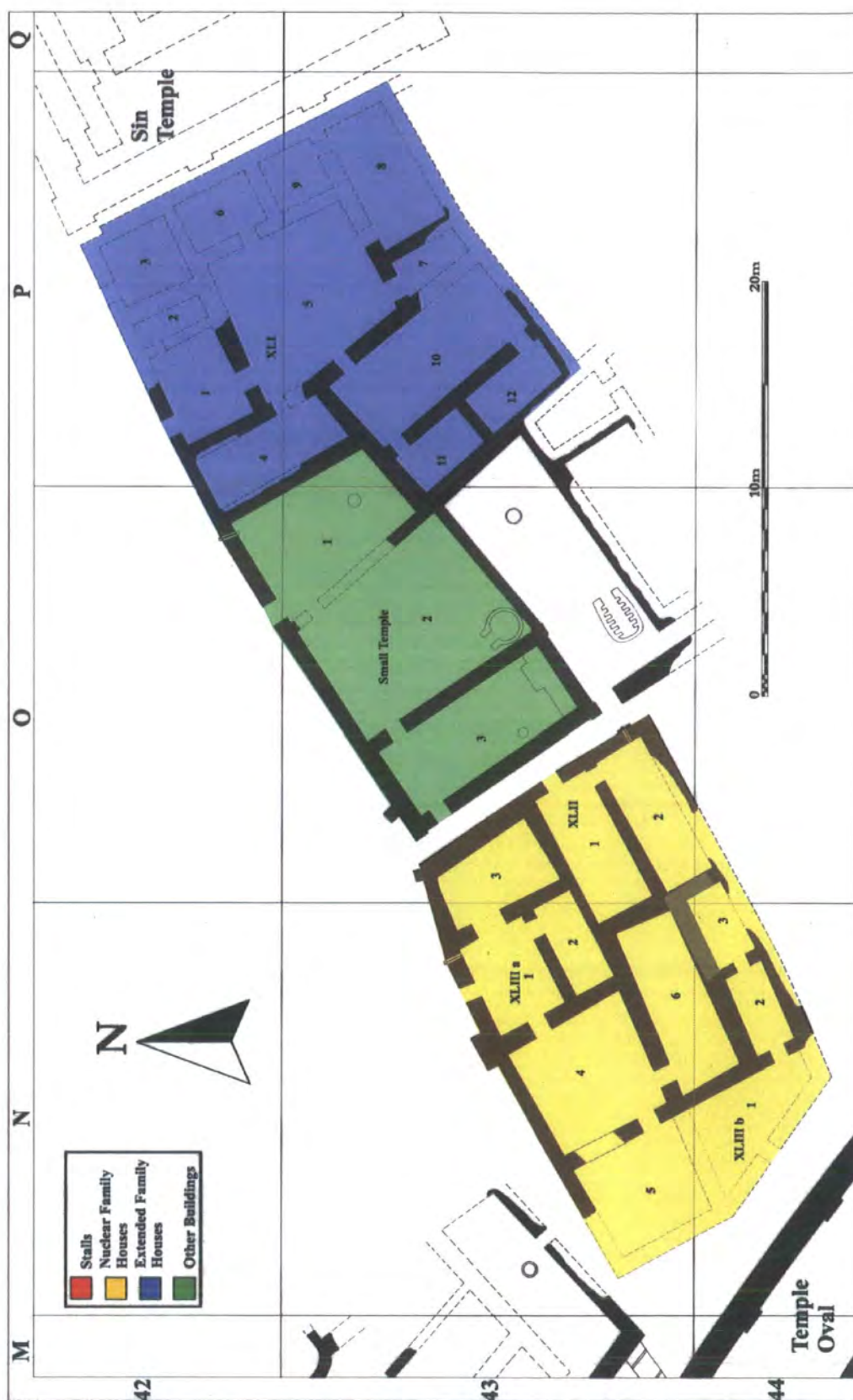


Fig. 3.61. Plan 'of Houses 3' at Khafajah, showing the location of building types.



Fig. 3.62. Plan of 'Houses 2' at Khafajah, showing the location of building types.

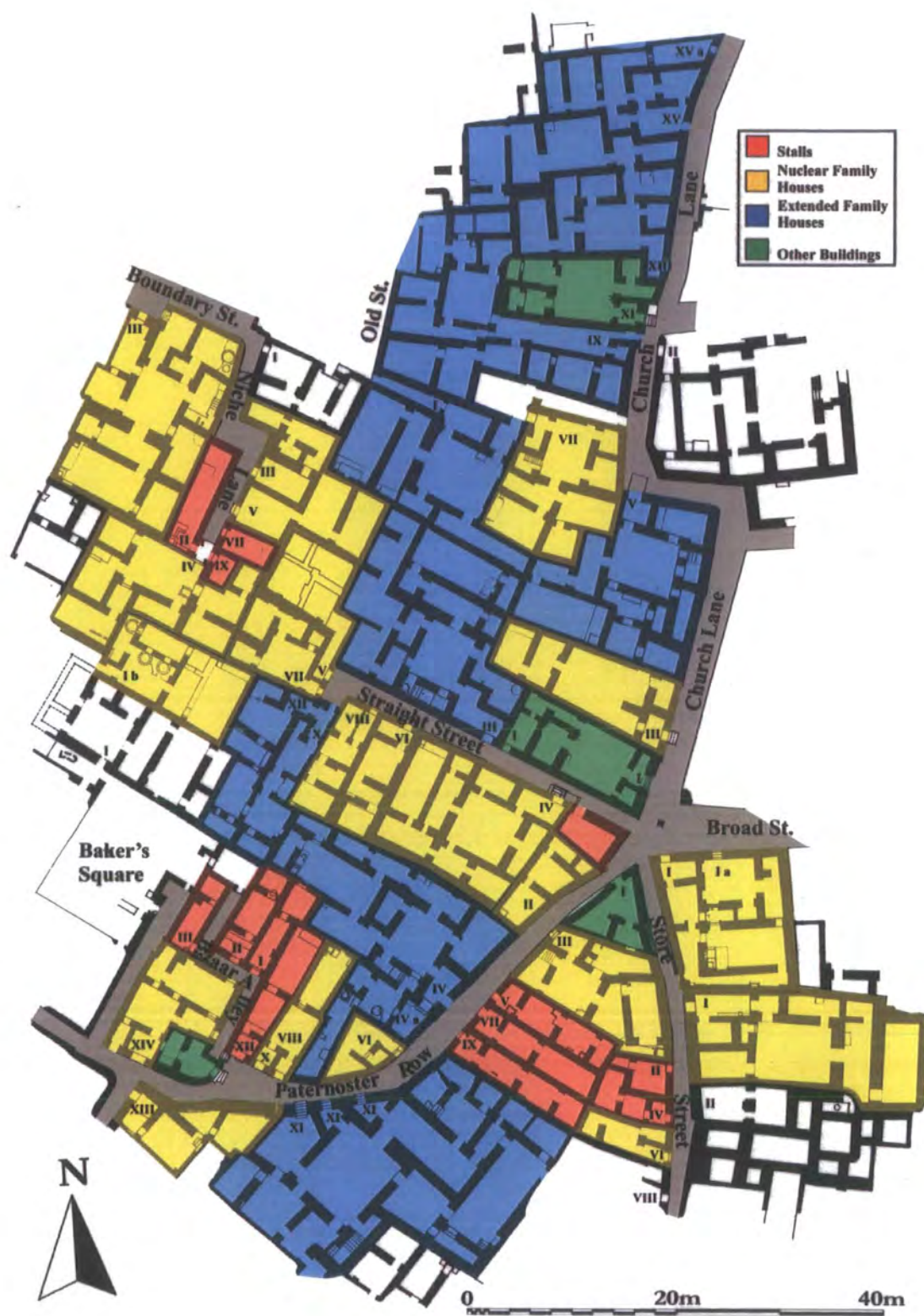


Fig. 3.63. Plan of the AH area at Ur, showing the location of building types.



Fig. 3.64. Plan of the EM area at Ur, showing the location of building types.

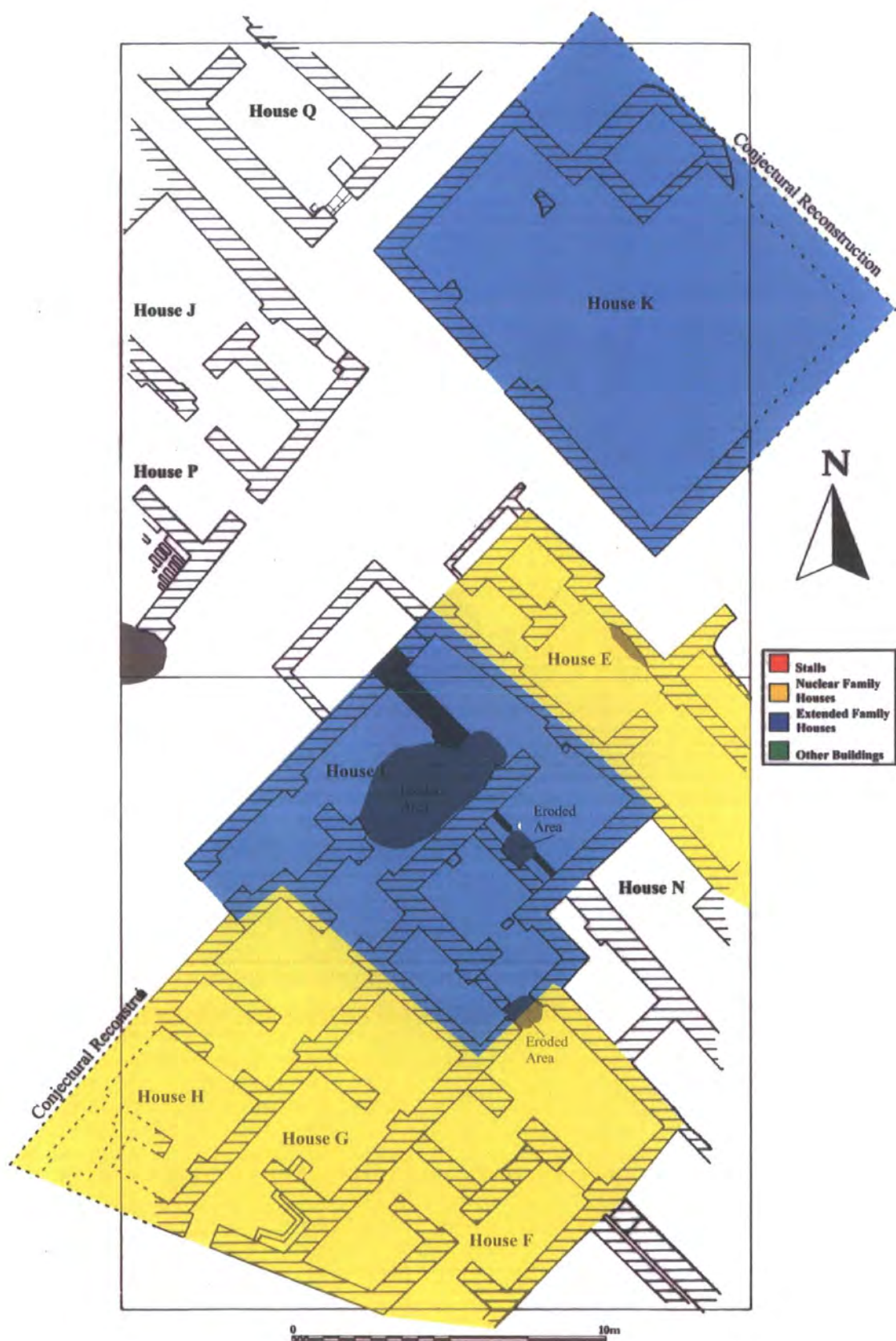


Fig. 3.65. Plan of the TA area at Nippur, showing the location of building types.

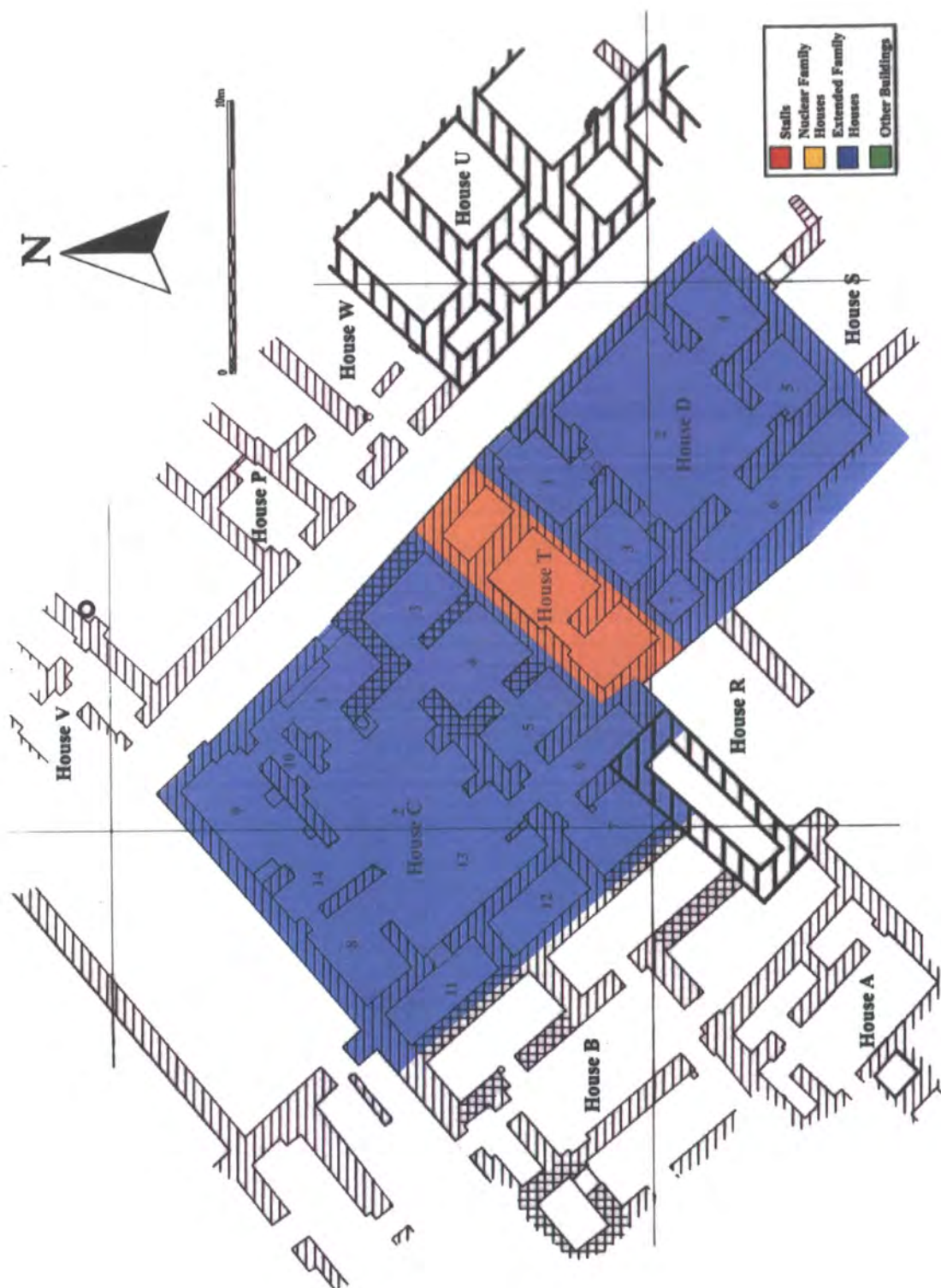


Fig. 3.66. Plan of the TB area at Nippur, showing the location of building types.

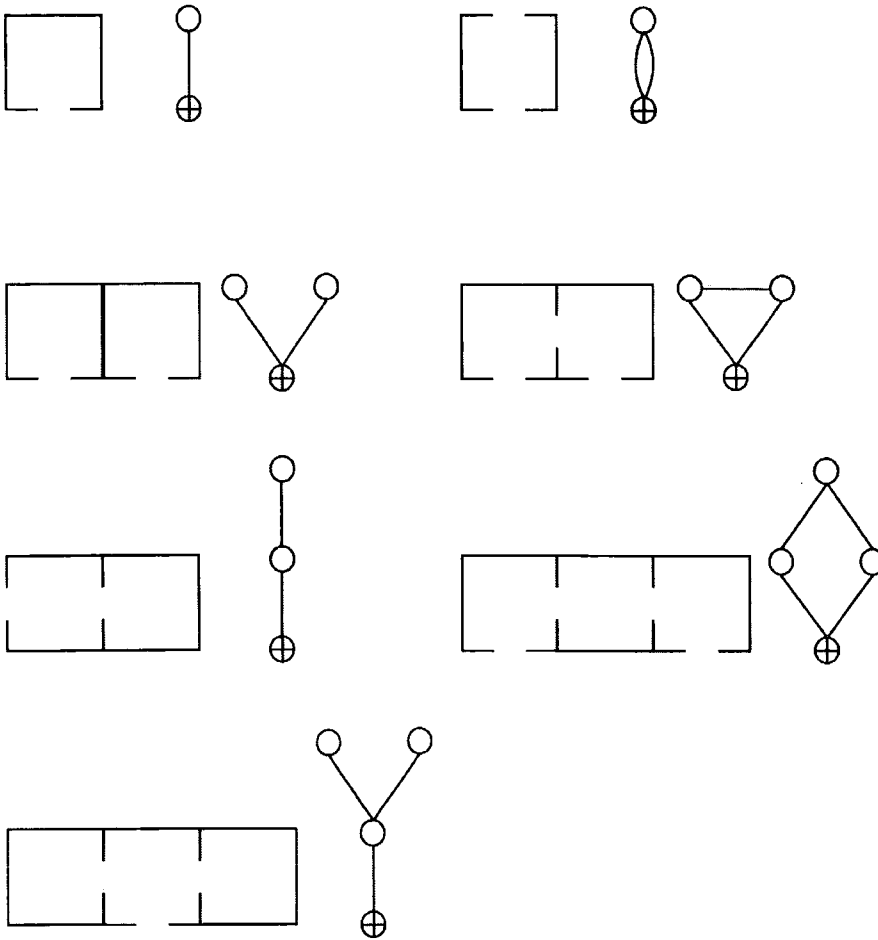


Fig. 3.67. Conventions used in this chapter for depicting access patterns.

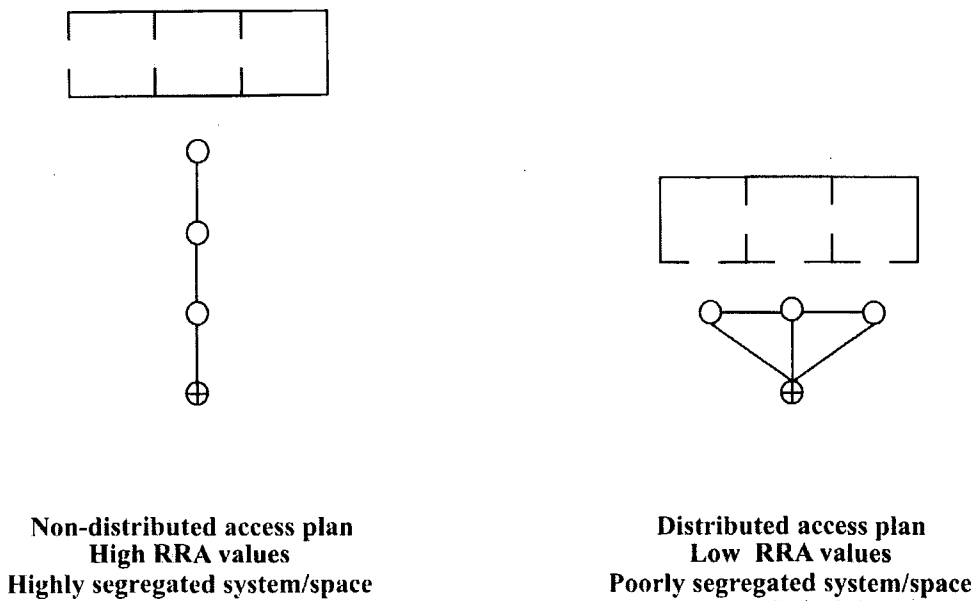


Fig. 3.68. Distributed and non-distributed access patterns.

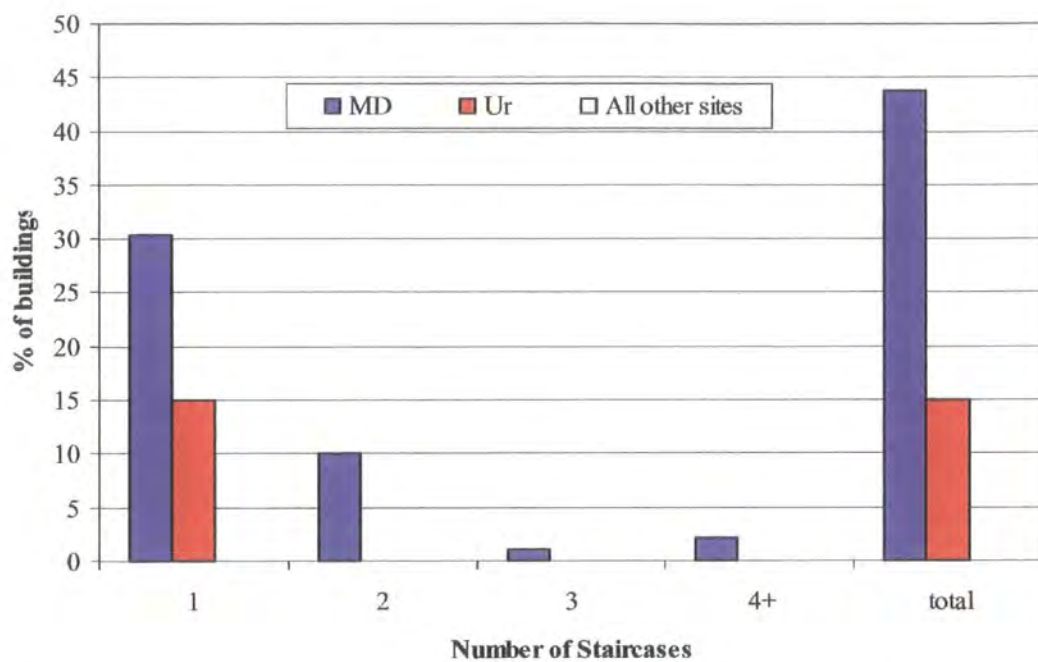
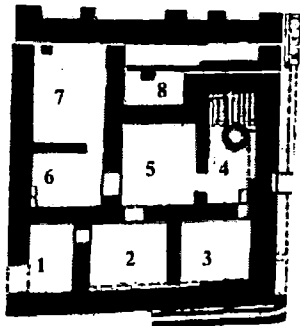
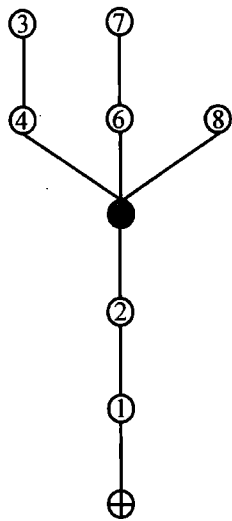
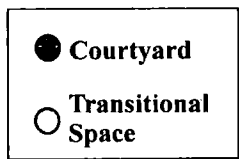
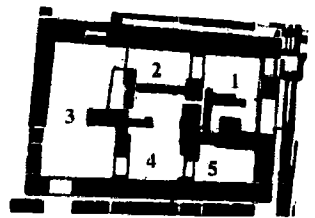


Fig. 3.69. Proportion of buildings with staircases in the sampled sites.



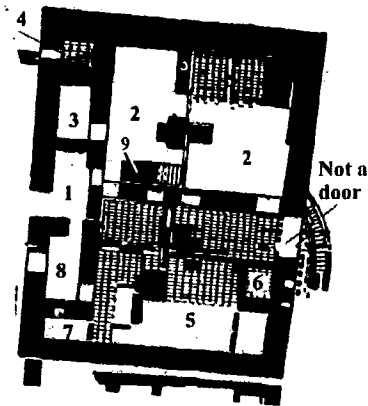
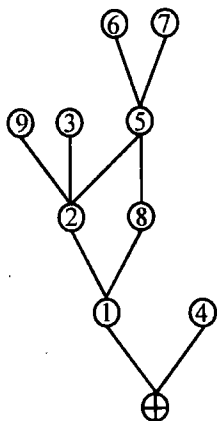
5:I

House RRA	2.178
Courtyard RRA	0.544



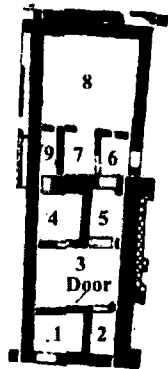
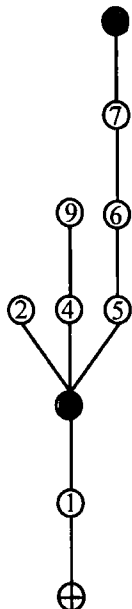
6:II

House RRA	2.841
Courtyard RRA	0.179



6A

House RRA	1.226
Courtyard RRA	0.179



7:VIII

House RRA	1.927
Courtyard RRA	2.454
2nd Courtyard RRA	0.701

Fig. 3.70. Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Southern Section).

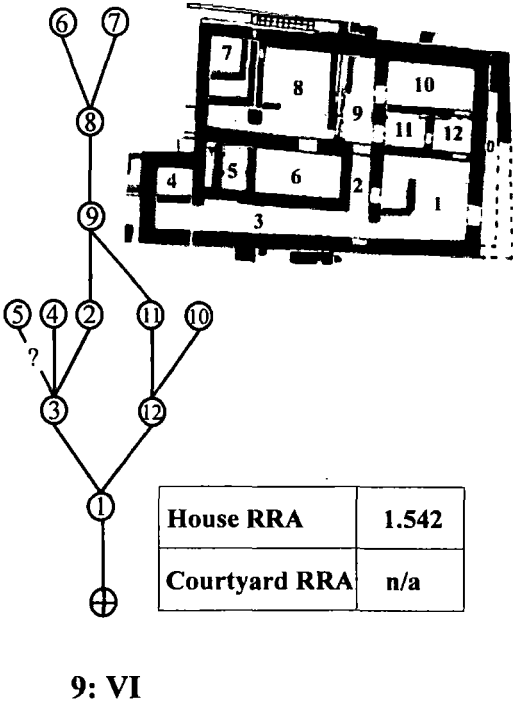
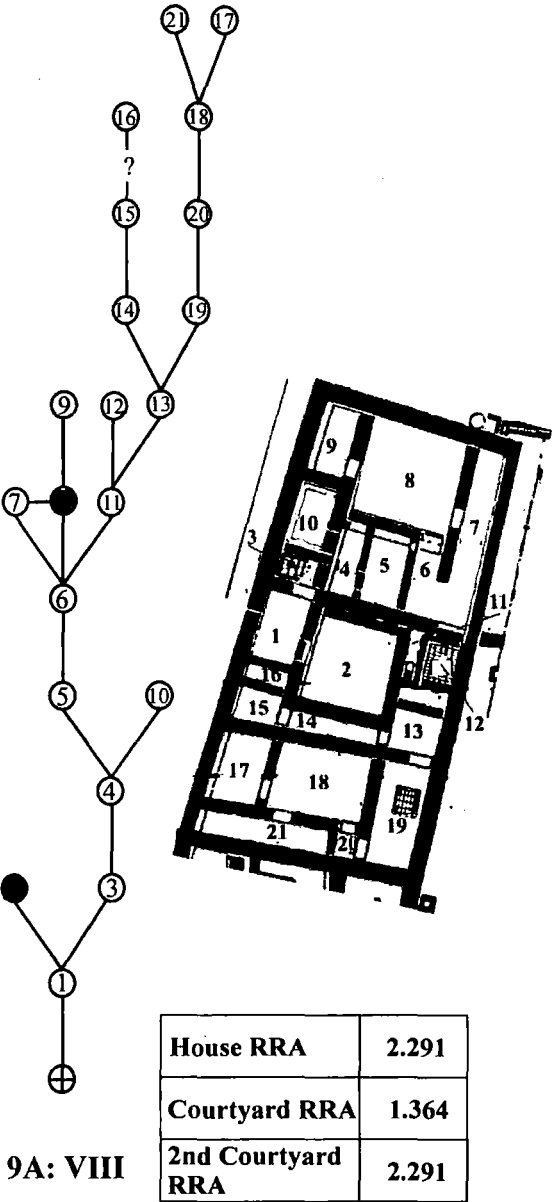
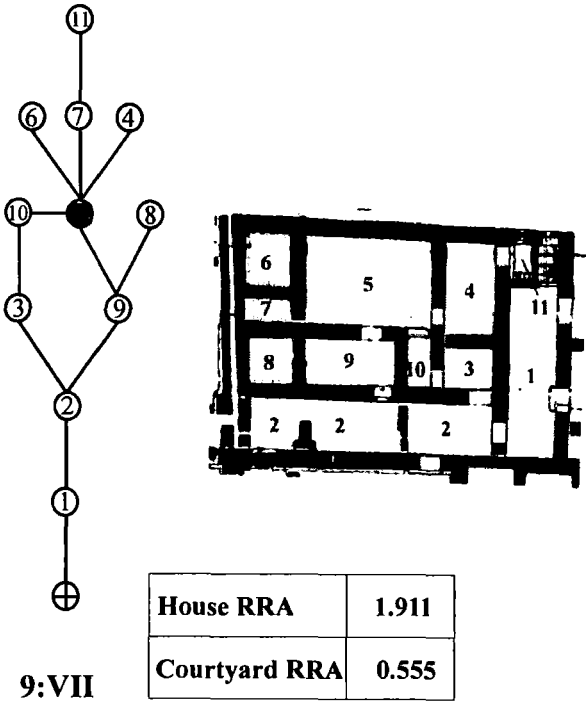
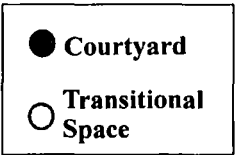
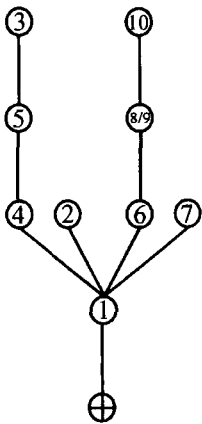
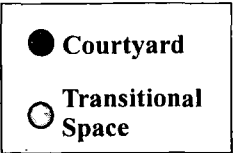
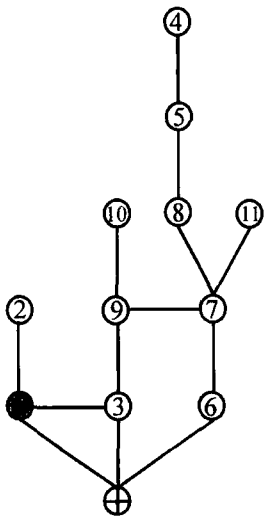
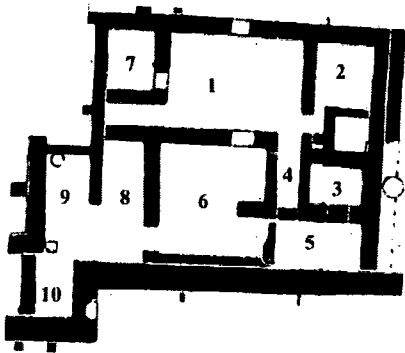


Fig. 3.71. Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Southern Section).



10:I

House RRA	1.226
Courtyard RRA	n/a



10:III (Intermediate Period)

House RRA	0.986
Courtyard RRA	0.678

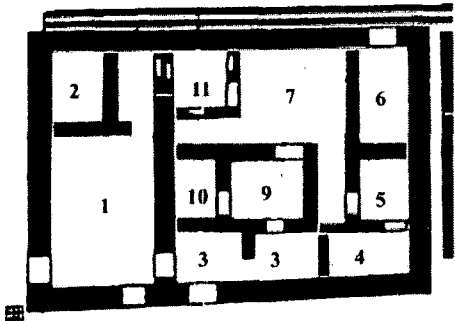
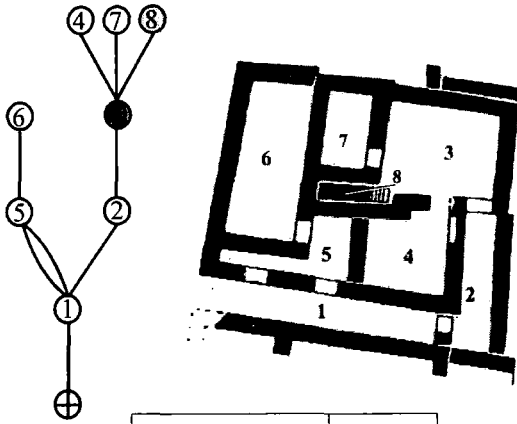
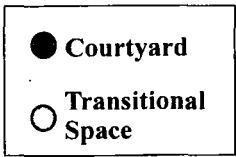
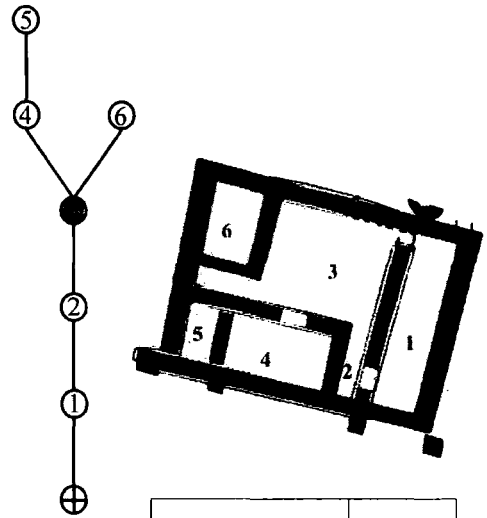


Fig. 3.72. Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Southern Section).



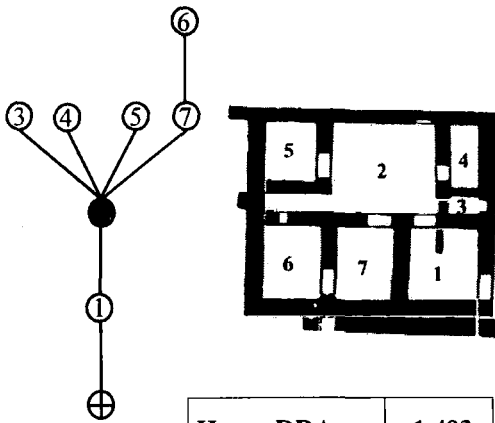
13:II

House RRA	1.680
Courtyard RRA	0.871



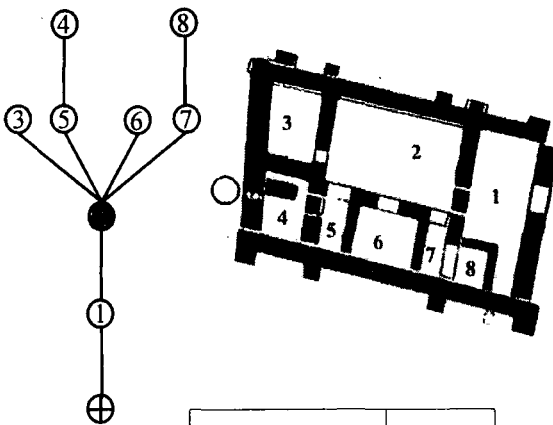
14:IV

House RRA	3.209
Courtyard RRA	0.764



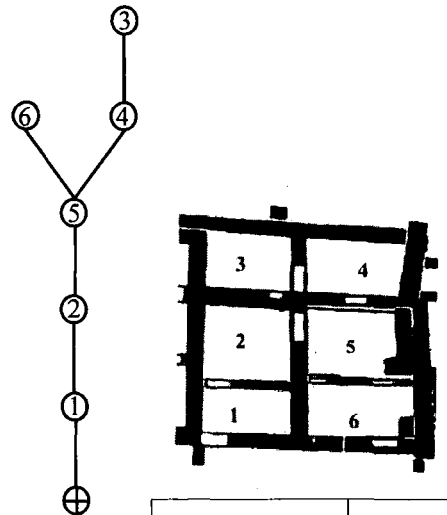
16:III

House RRA	1.493
Courtyard RRA	0.109



14:III

House RRA	0.714
Courtyard RRA	0.327



21:III

House RRA	2.484
Courtyard RRA	n/a

Fig. 3.73. Permeability map and RRA values for Houses in Mohenjo Daro DK-G (Northern Section).

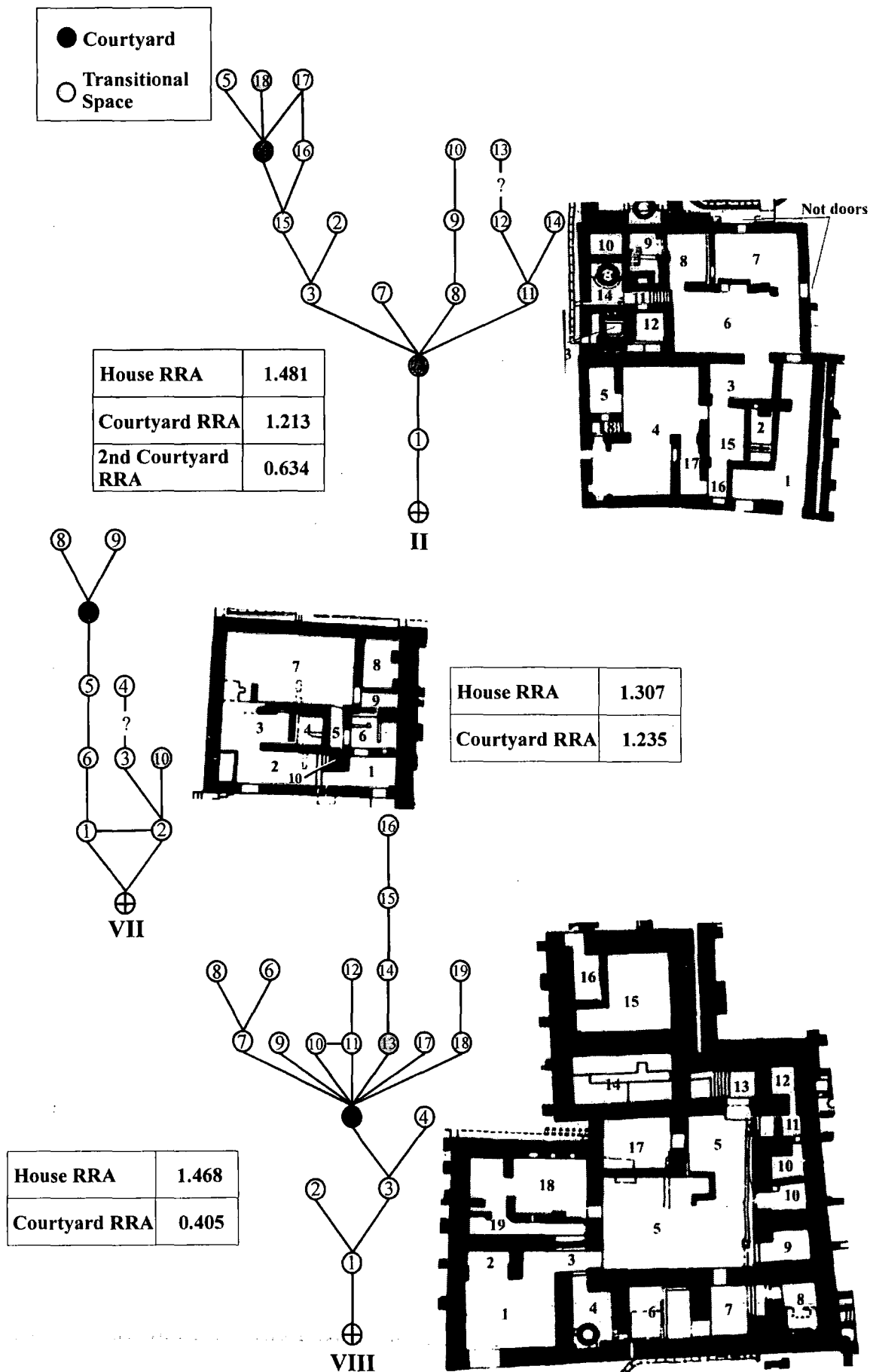


Fig. 3.74. Permeability map and RRA values for Houses in Mohenjo Daro HR-A.

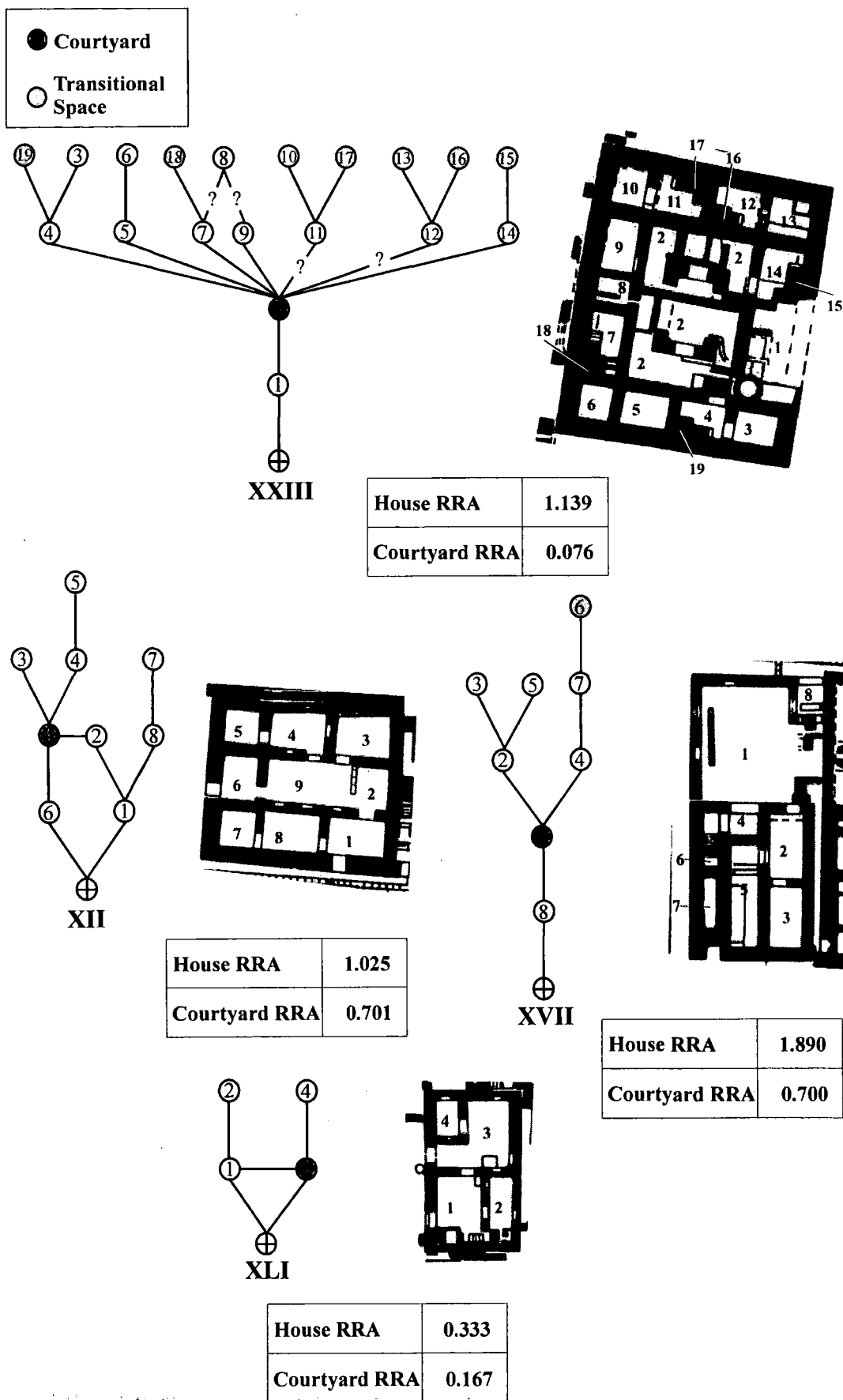


Fig. 3.75. Permeability map and RRA values for Houses in Mohenjo Daro HR-B.

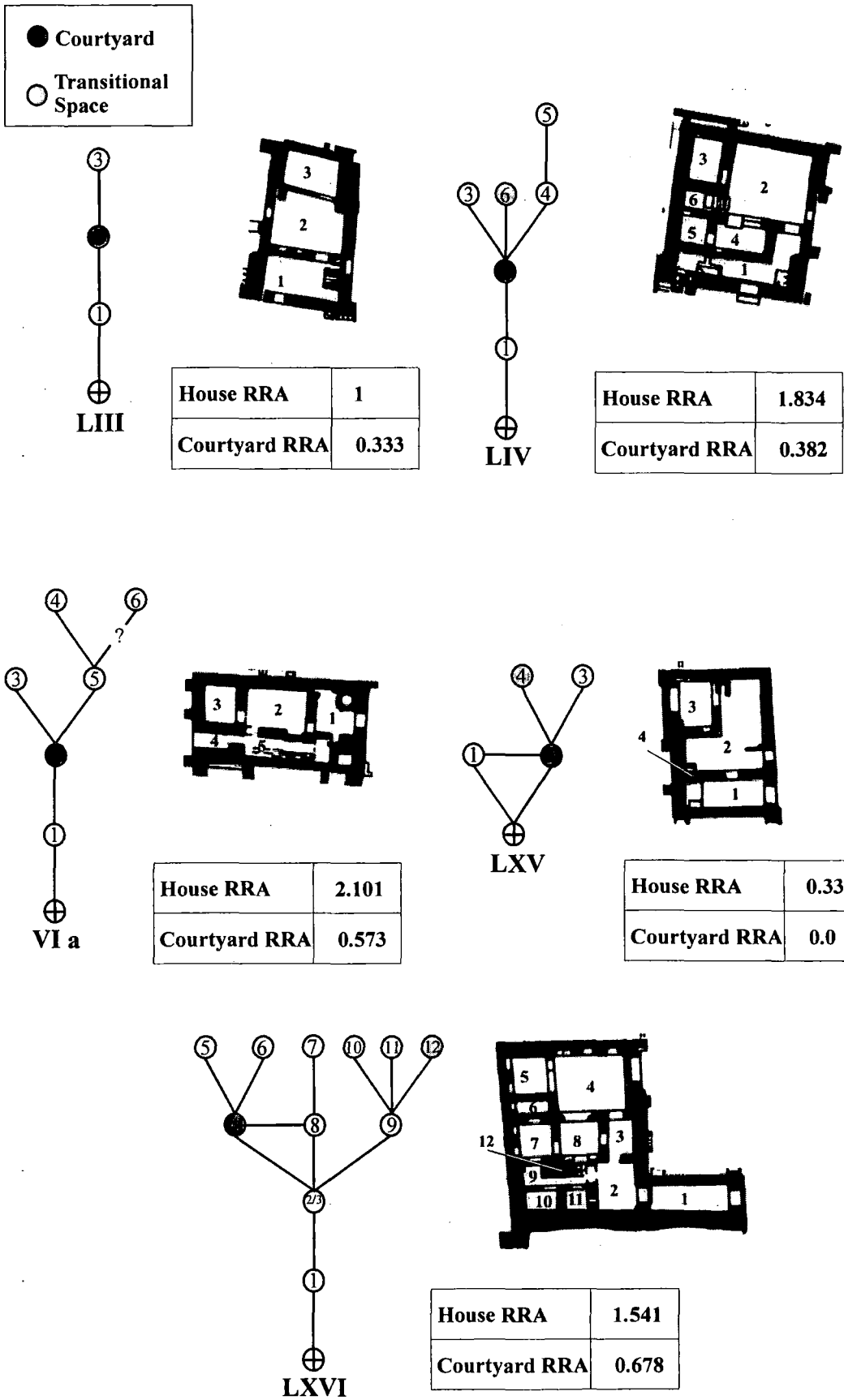
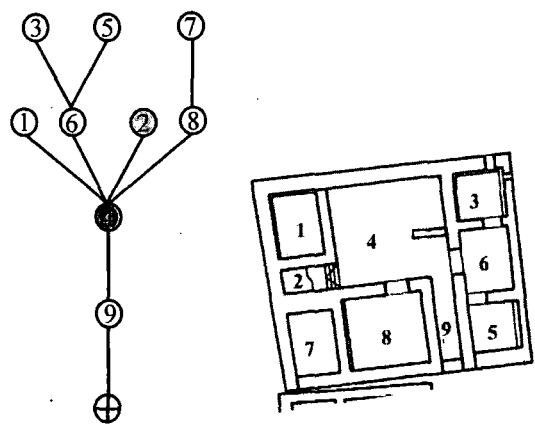
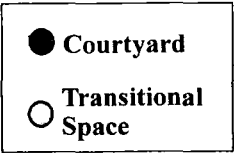
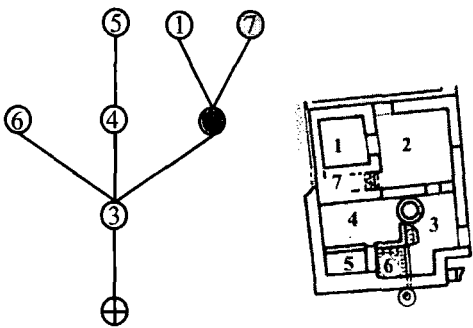


Fig. 3.76. Permeability map and RRA values for Houses in Mohenjo Daro HR-B.



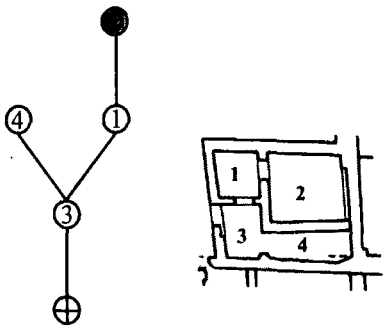
A:I

House RRA	1.577
Courtyard RRA	0.351



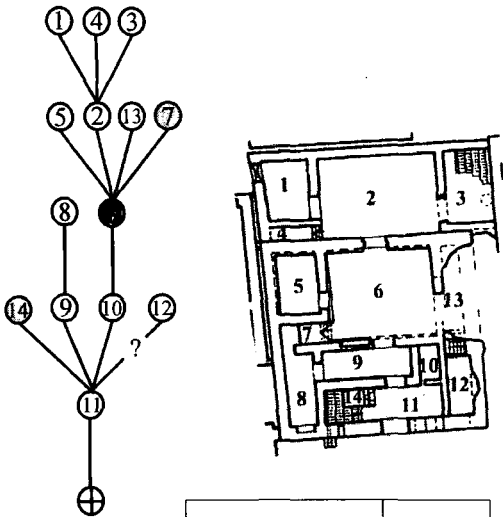
A:II 2

House RRA	1.330
Courtyard RRA	0.700



A:III

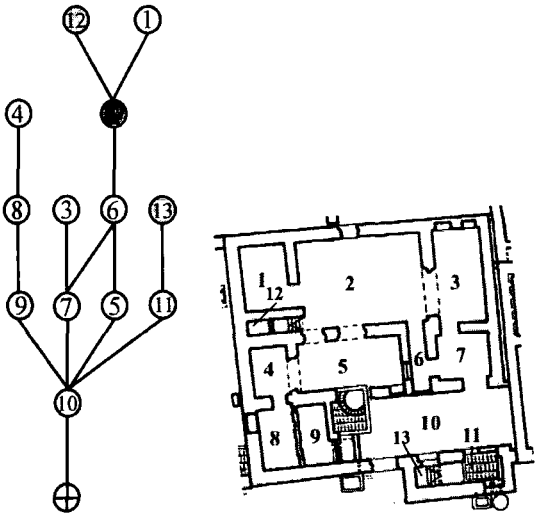
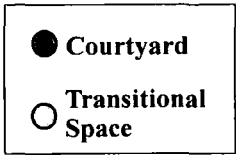
House RRA	0.667
Courtyard RRA	0.833



B:II

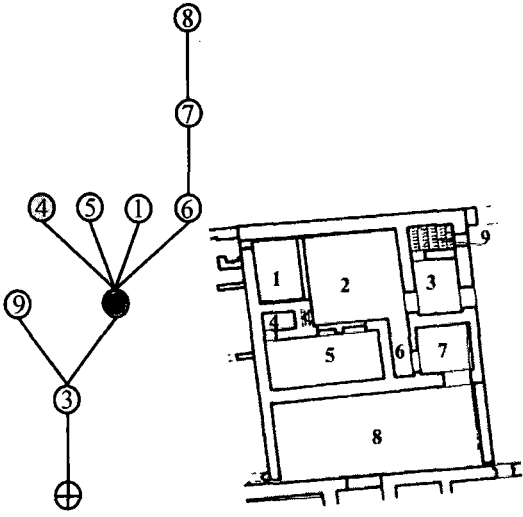
House RRA	1.275
Courtyard RRA	0.617

Fig. 3.77. Permeability map and RRA values for Houses in Mohenjo Daro Moneer area.



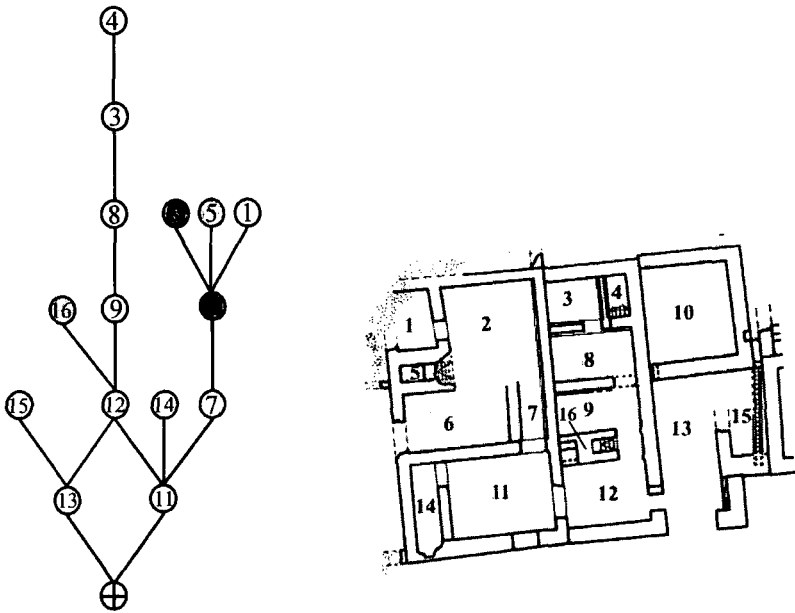
B:IV

House RRA	0.850
Courtyard RRA	1.301



B:VI 1

House RRA	1.439
Courtyard RRA	0.653

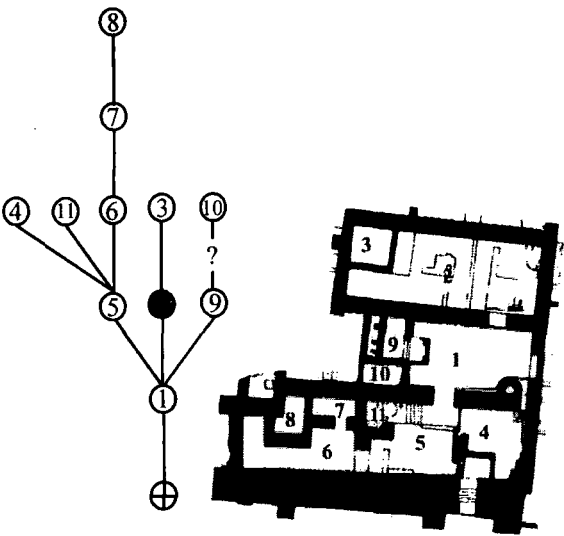
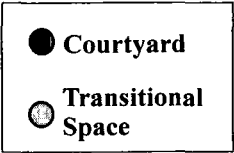


E:I

House RRA	1.140
Courtyard RRA	1.399

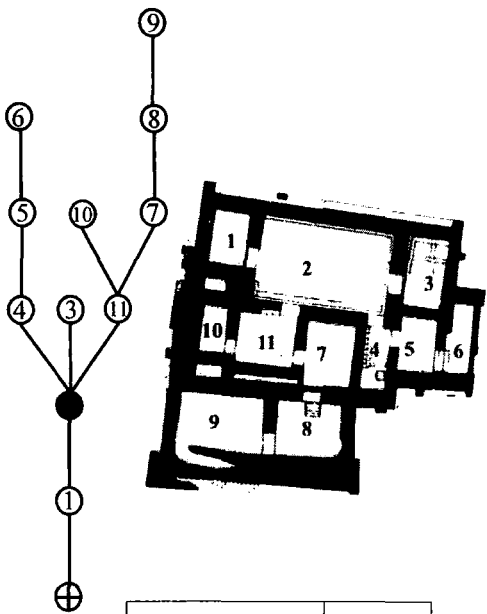
* Rooms 6 and 2 have been treated as a single space for the calculation of the courtyard RA.

Fig. 3.78. Permeability map and RRA values for Houses in Mohenjo Daro Moneer area.



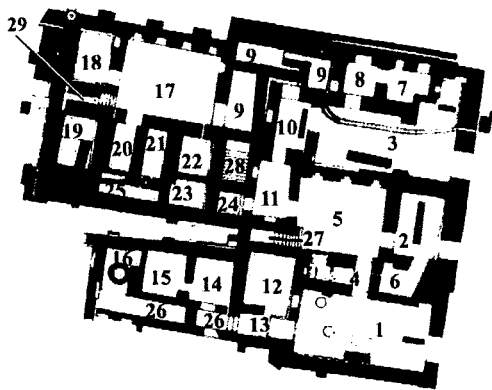
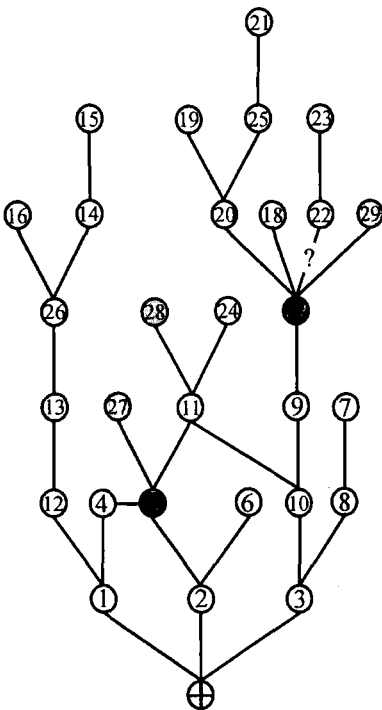
II

House RRA	1.190
Courtyard RRA	0.179



V

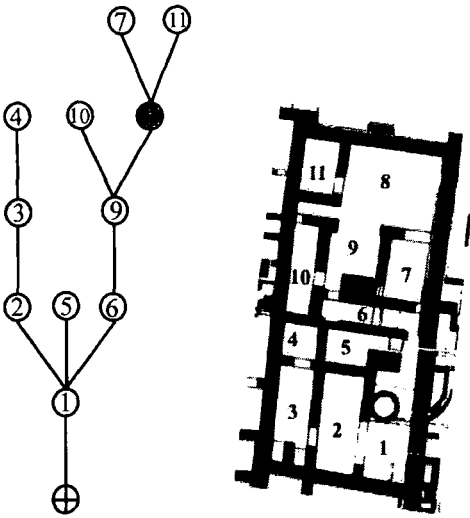
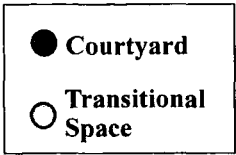
House RRA	1.787
Courtyard RRA	0.678



House RRA	1.044
Courtyard RRA	1.365
2nd Courtyard RRA	1.098

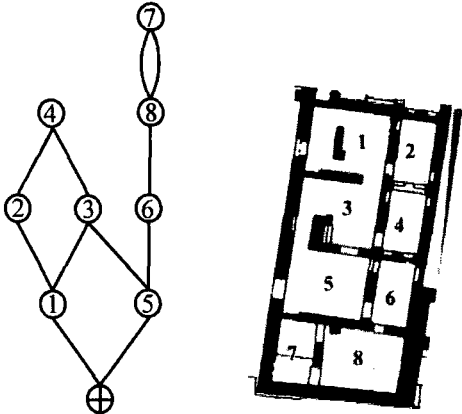
XIII

Fig. 3.79. Permeability map and RRA values for Houses in Mohenjo Daro VS-A.



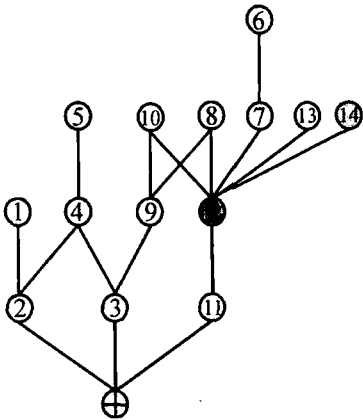
VIII

House RRA	1.478
Courtyard RRA	1.726



XVIII

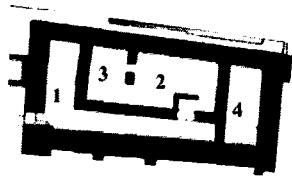
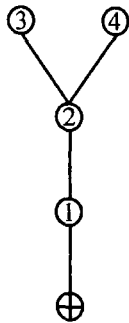
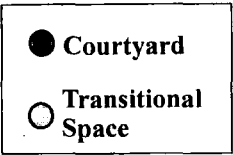
House RRA	1.089
Courtyard RRA	n/a



XIX

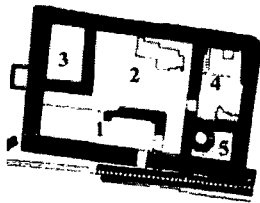
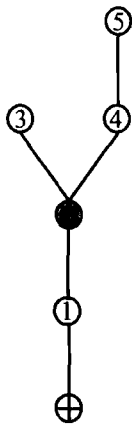
House RRA	0.785
Courtyard RRA	0.700

Fig. 3.80. Permeability map and RRA values for Houses in Mohenjo Daro VS-A.



II

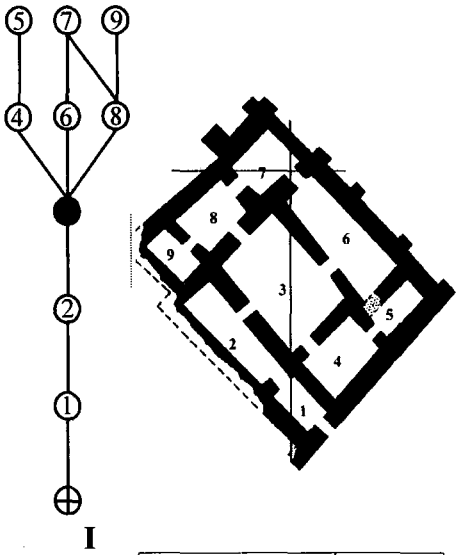
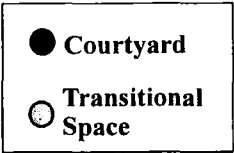
House RRA	0.833
Courtyard RRA	n/a



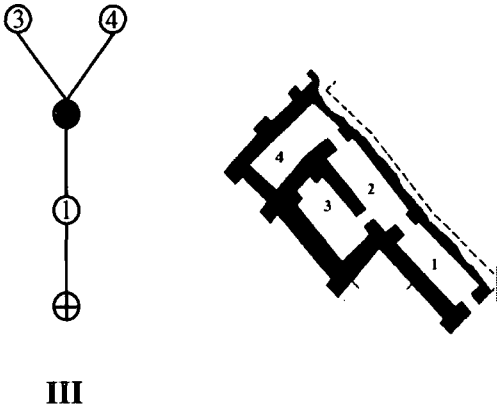
III

House RRA	2.273
Courtyard RRA	0.568

Fig. 3.81. Permeability map and RRA values for Houses in Mohenjo Daro VS-B.



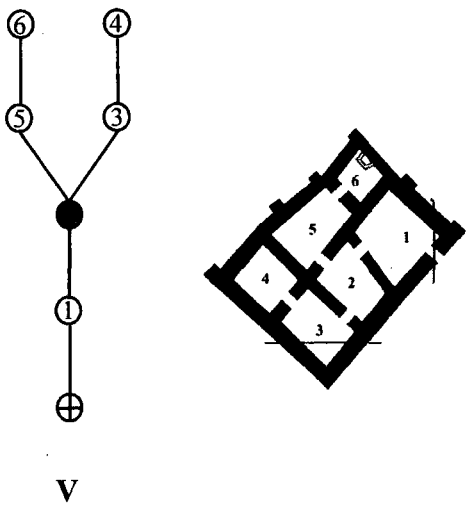
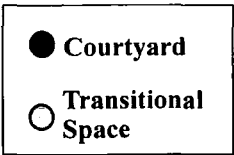
House RRA	2.050
Courtyard RRA	0.526



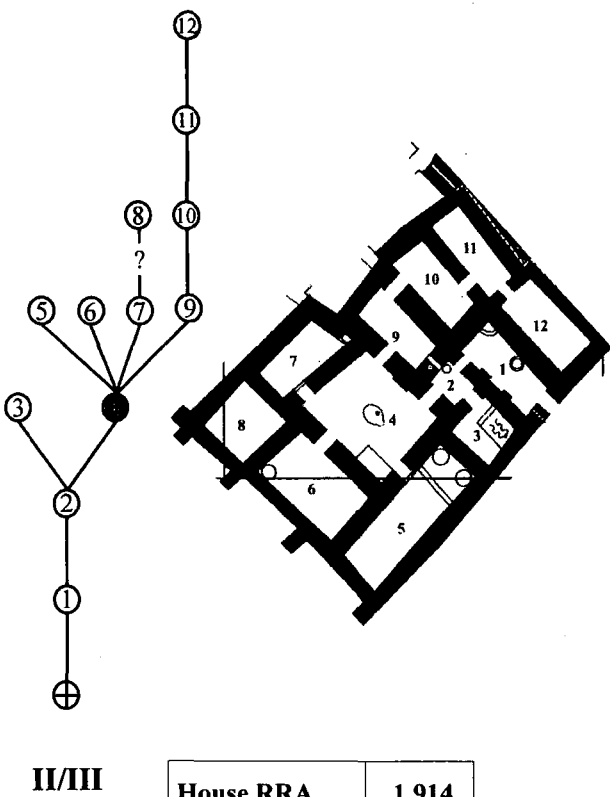
III

House RRA	0..833
Courtyard RRA	0.167

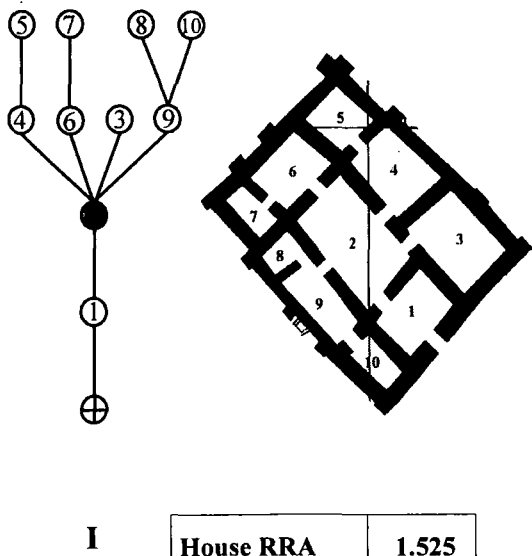
Fig. 3.82. Permeability map and RRA values for Houses in Asmar Vc.



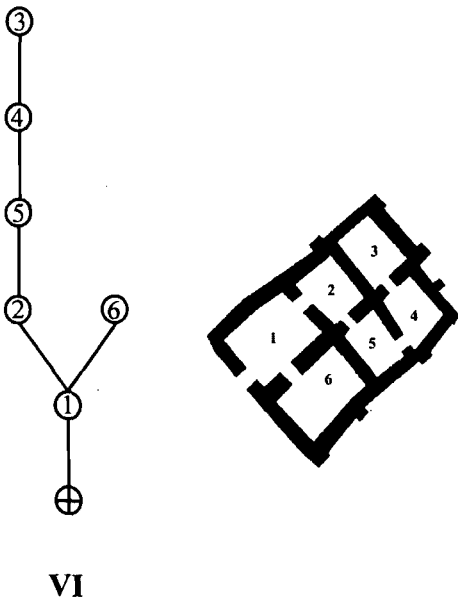
House RRA	2.101
Courtyard RRA	0.585



House RRA	1.914
Courtyard RRA	0.585

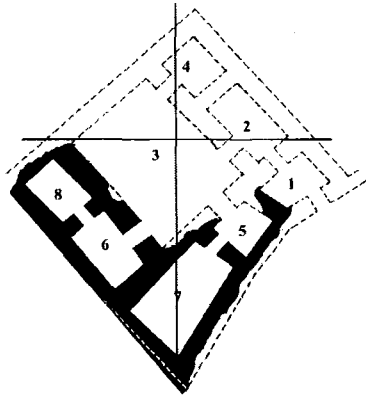
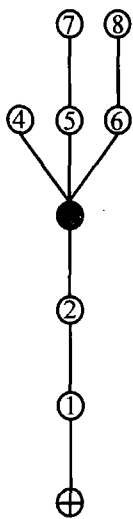
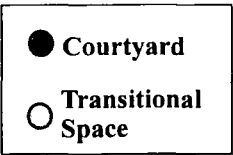


House RRA	1.525
Courtyard RRA	0.363



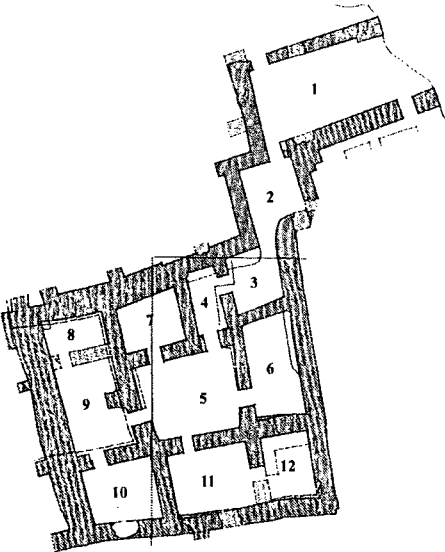
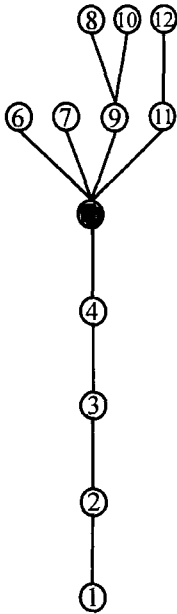
House RRA	2.101
Courtyard RRA	n/a

Fig. 3.83. Permeability map and RRA values for Houses in Asmar Vb.



Vb, VII

House RRA	2.178
Courtyard RRA	0.544



Early Northern Palace, House 2

House RRA	2.551
Courtyard RRA	0.425

Fig. 3.84. Permeability map and RRA values for Houses in Asmar Vb, and adjacent to the Early Northern Palace.

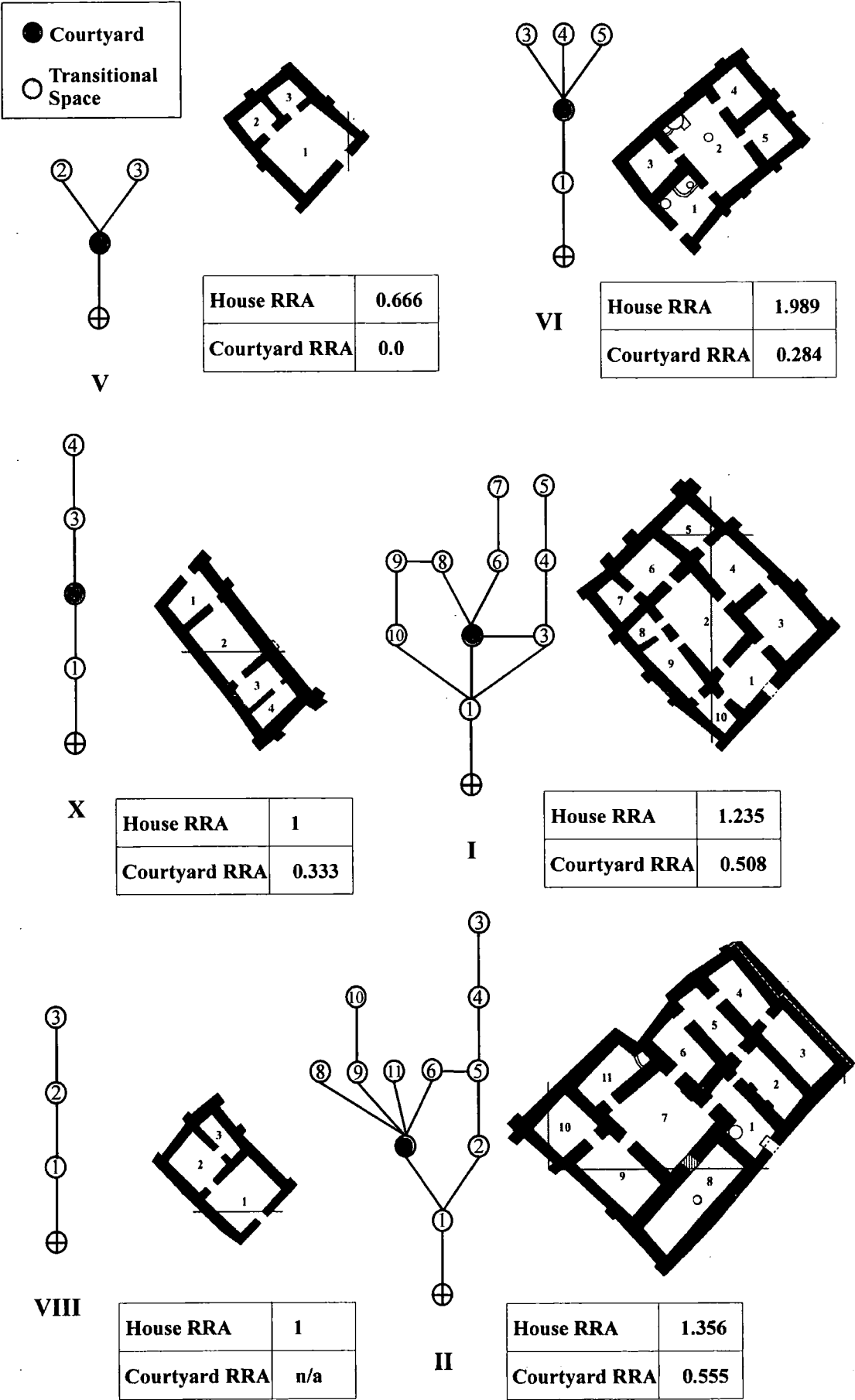


Fig. 3.85. Permeability map and RRA values for Houses in Asmar Va.

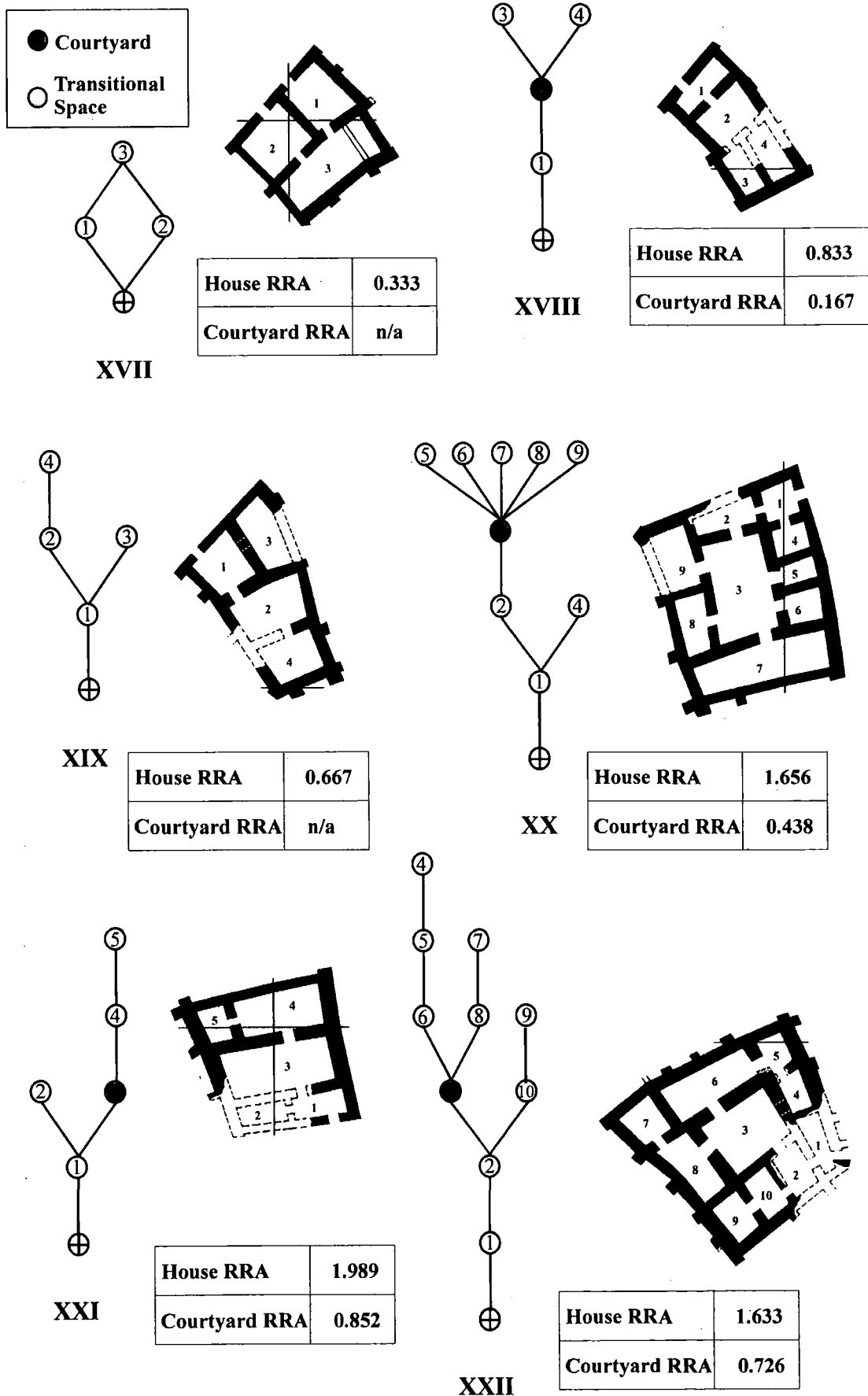
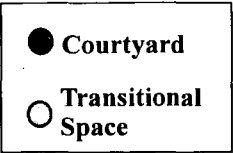
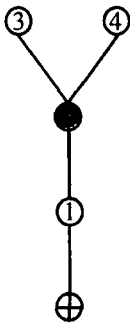


Fig. 3.86. Permeability map and RRA values for Houses in Asmar Va.



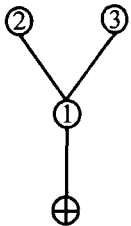
House RRA	1
Courtyard RRA	n/a

XII



House RRA	0.833
Courtyard RRA	0.167

XI



House RRA	0.666
Courtyard RRA	n/a

XIII



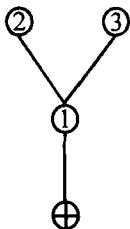
House RRA	1
Courtyard RRA	n/a

XIV



House RRA	1
Courtyard RRA	n/a

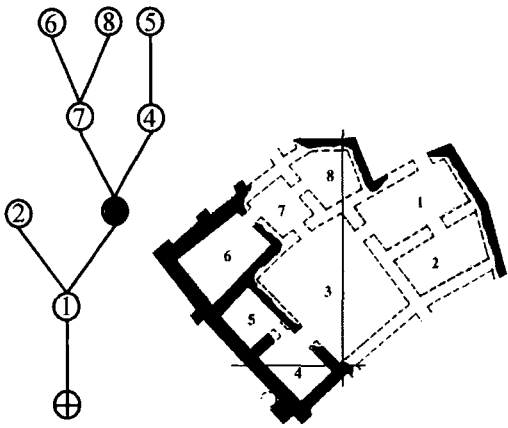
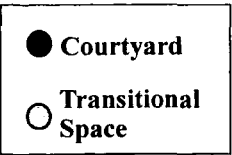
XV



House RRA	0.666
Courtyard RRA	n/a

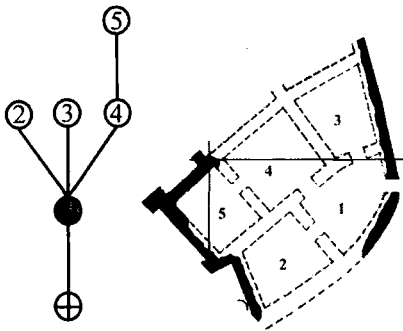
XVI

Fig. 3.87. Permeability map and RRA values for Houses in Asmar Va.



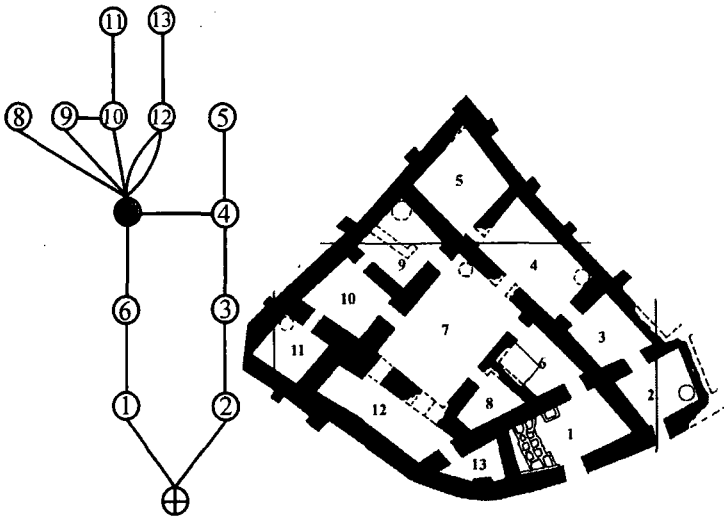
XXIII

House RRA	1.633
Courtyard RRA	0.544



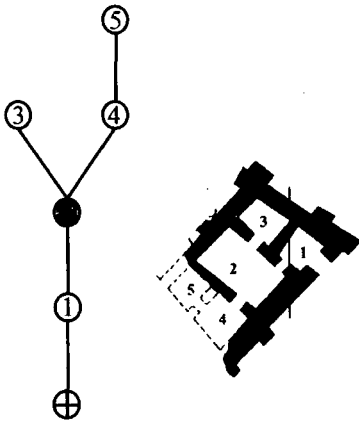
XXIV

House RRA	1.989
Courtyard RRA	0.284



XXV

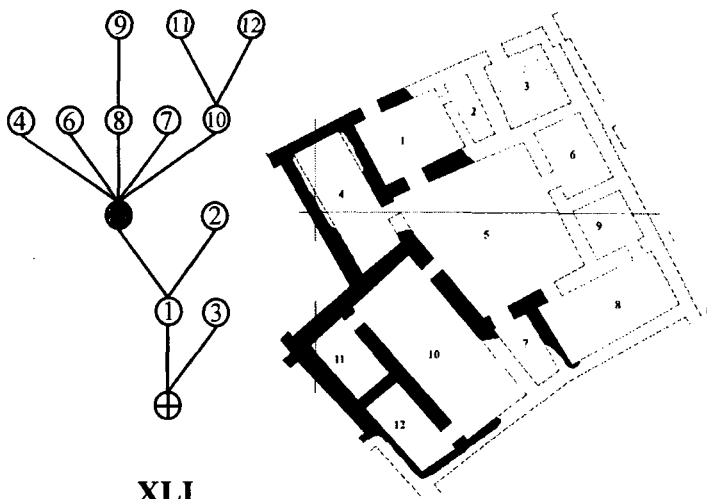
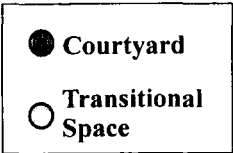
House RRA	1.328
Courtyard RRA	0.418



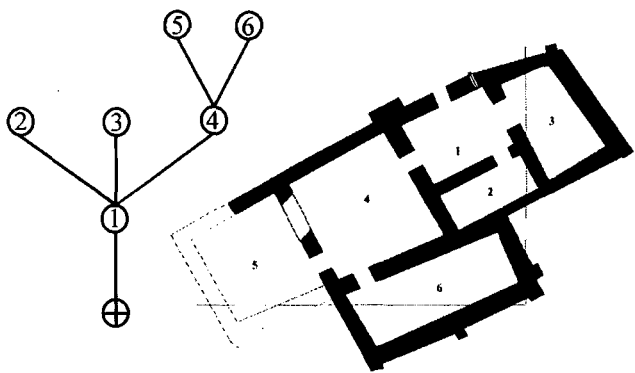
XXVI

House RRA	2.273
Courtyard RRA	0.568

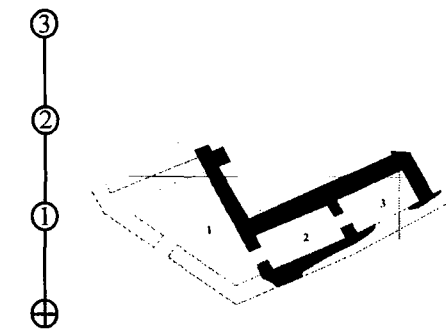
Fig. 3.88. Permeability map and RRA values for Houses in Asmar Va.



House RRA	1.116
Courtyard RRA	0.372

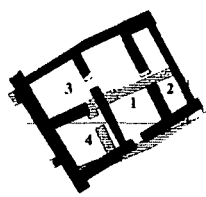
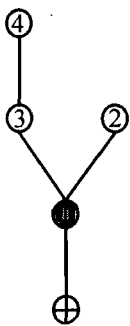
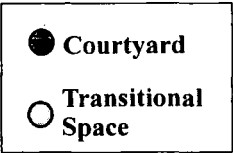


House RRA	1.337
Courtyard RRA	n/a



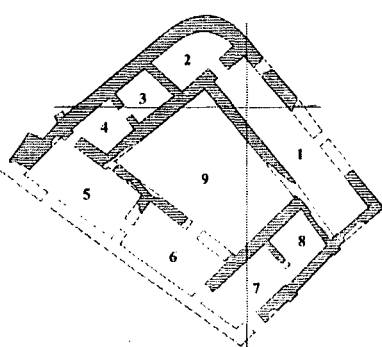
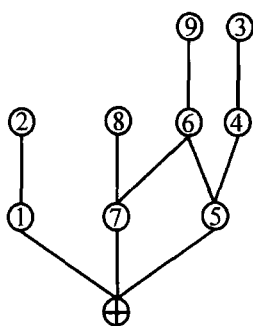
House RRA	1
Courtyard RRA	n/a

Fig. 3.89. Permeability map and RRA values for Houses in Khafajah ‘Houses 3’.



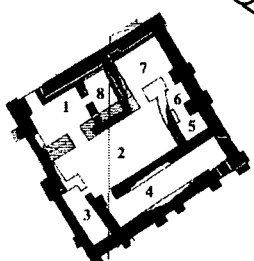
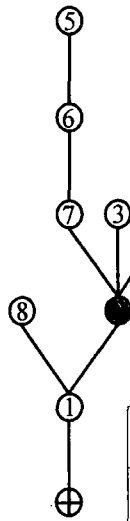
House RRA	0.667
Courtyard RRA	0.167

LI



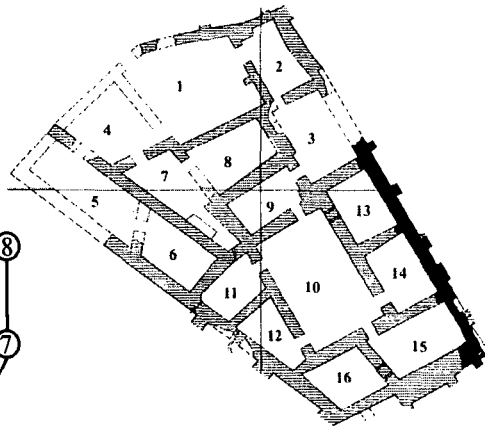
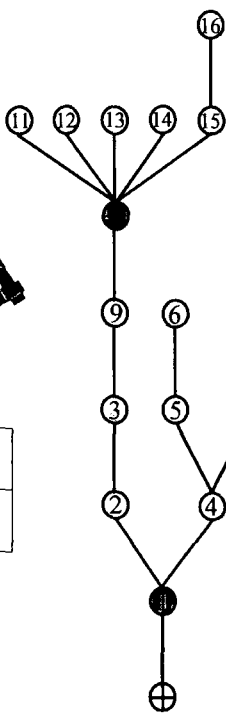
XLV

House RRA	0.700
Courtyard RRA	1.577



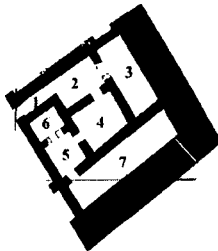
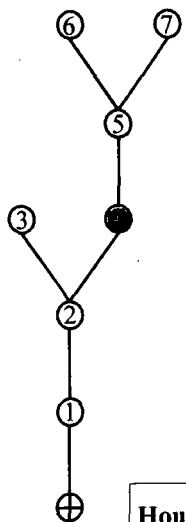
House RRA	1.633
Courtyard RRA	0.544

L



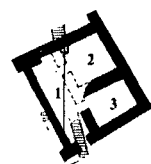
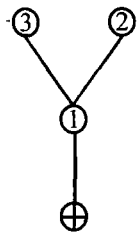
XLVI

House RRA	1.726
Courtyard RRA	1.594
2nd Courtyard RRA	1.793



House RRA	2.241
Courtyard RRA	0.840

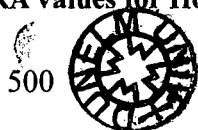
XLVII



LI a

House RRA	0.667
Courtyard RRA	n/a

Fig. 3.90. Permeability map and RRA values for Houses in Khafajah 'Houses 2'.



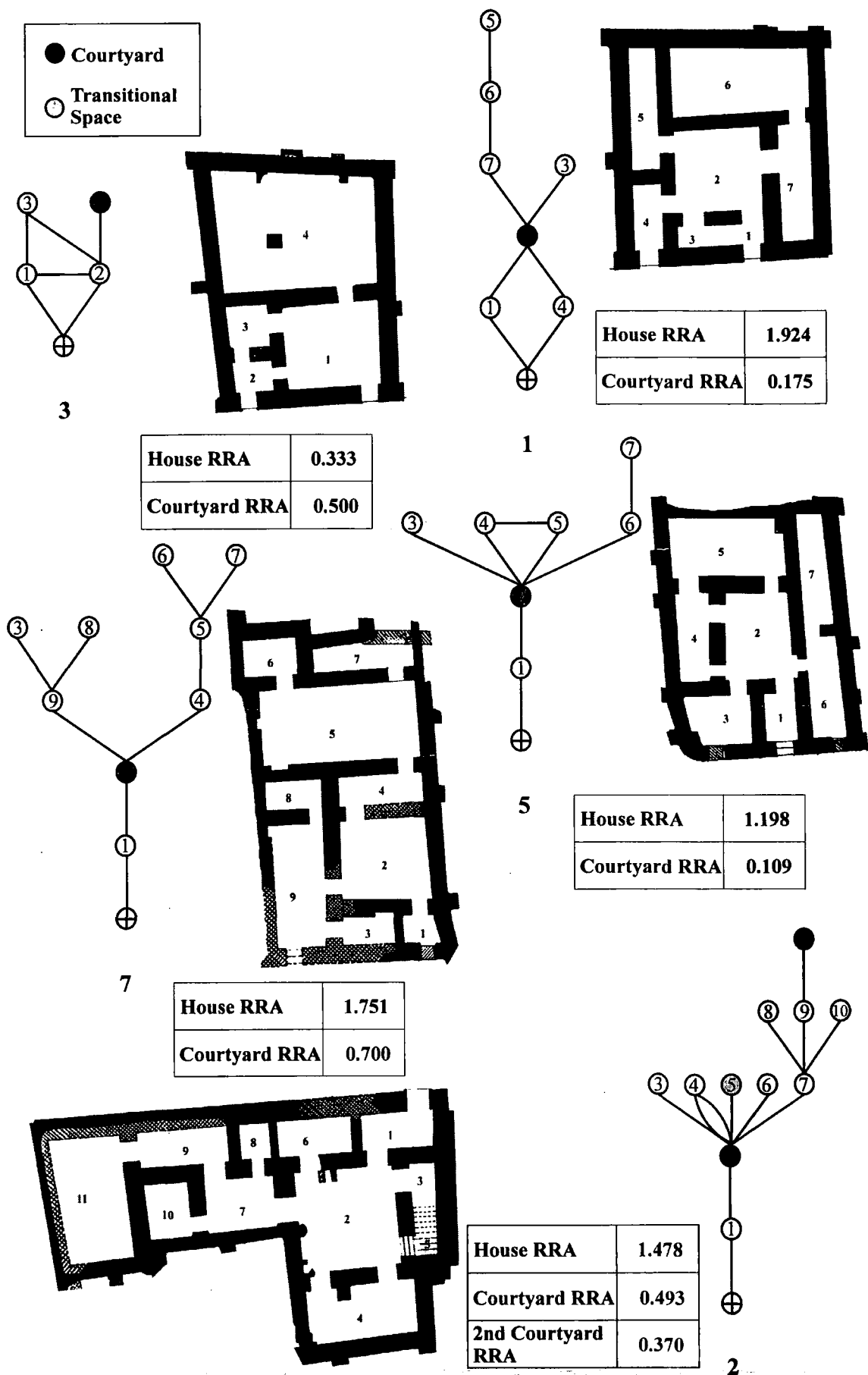
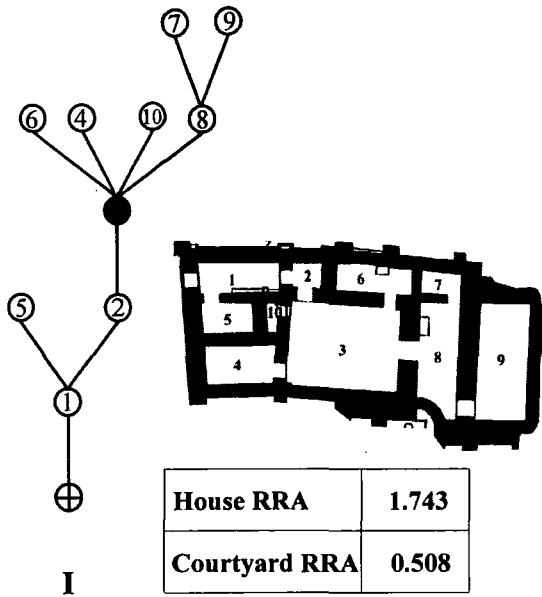
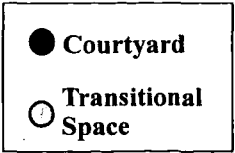
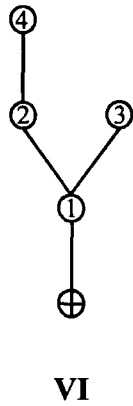


Fig. 3.92. Permeability map and RRA values for Houses in Ur EM, Quiet Street.

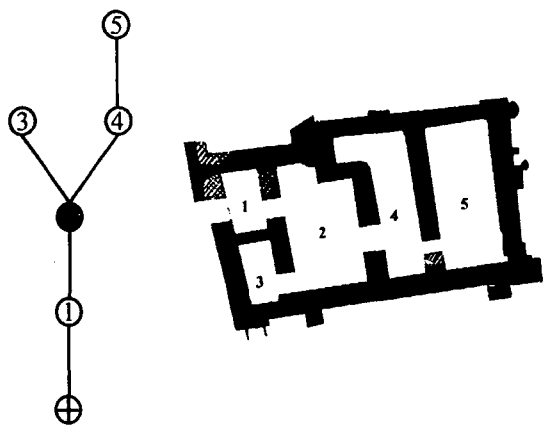


I



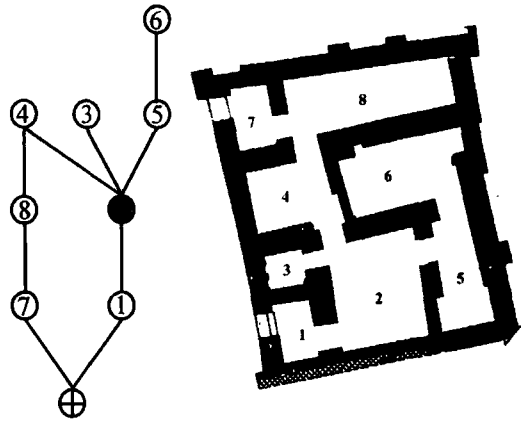
House RRA	0.667
Courtyard RRA	n/a

Store Street



1

House RRA	2.415
Courtyard RRA	0.568

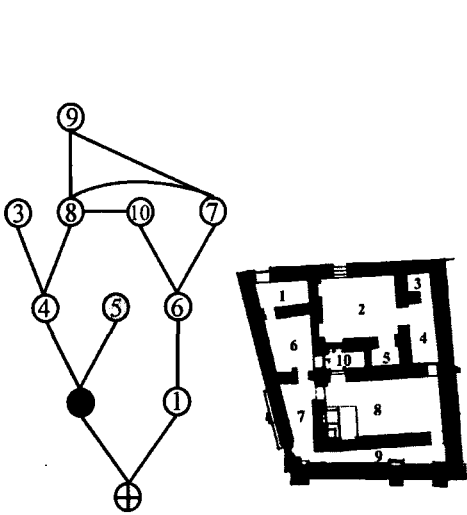
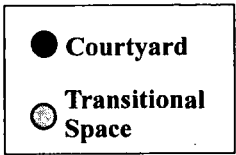


2/3

House RRA	1.198
Courtyard RRA	0.544

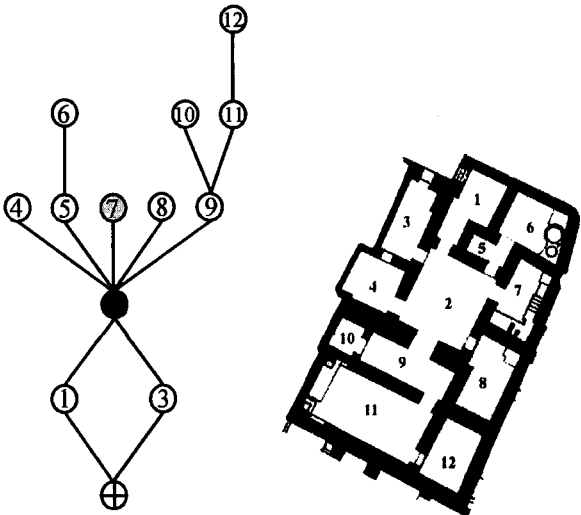
New Street

Fig. 3.93. Permeability map and RRA values for Houses in Ur EM, New Street and Ur AH, Store Street.



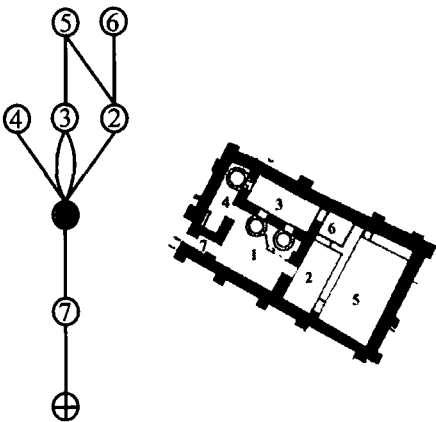
I Broad Street

House RRA	1.017
Courtyard RRA	0.871



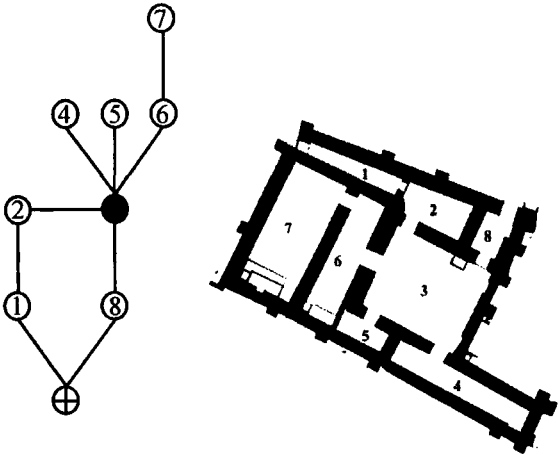
I/III Boundary Street

House RRA	1.212
Courtyard RRA	0.319



Ib Baker's Square

House RRA	1.136
Courtyard RRA	0.088



I Old Street

House RRA	1.089
Courtyard RRA	0.327

Fig. 3.94. Permeability map and RRA values for Houses in Ur AH, Broad Street, Boundary Street, Baker's Square and Old Street.

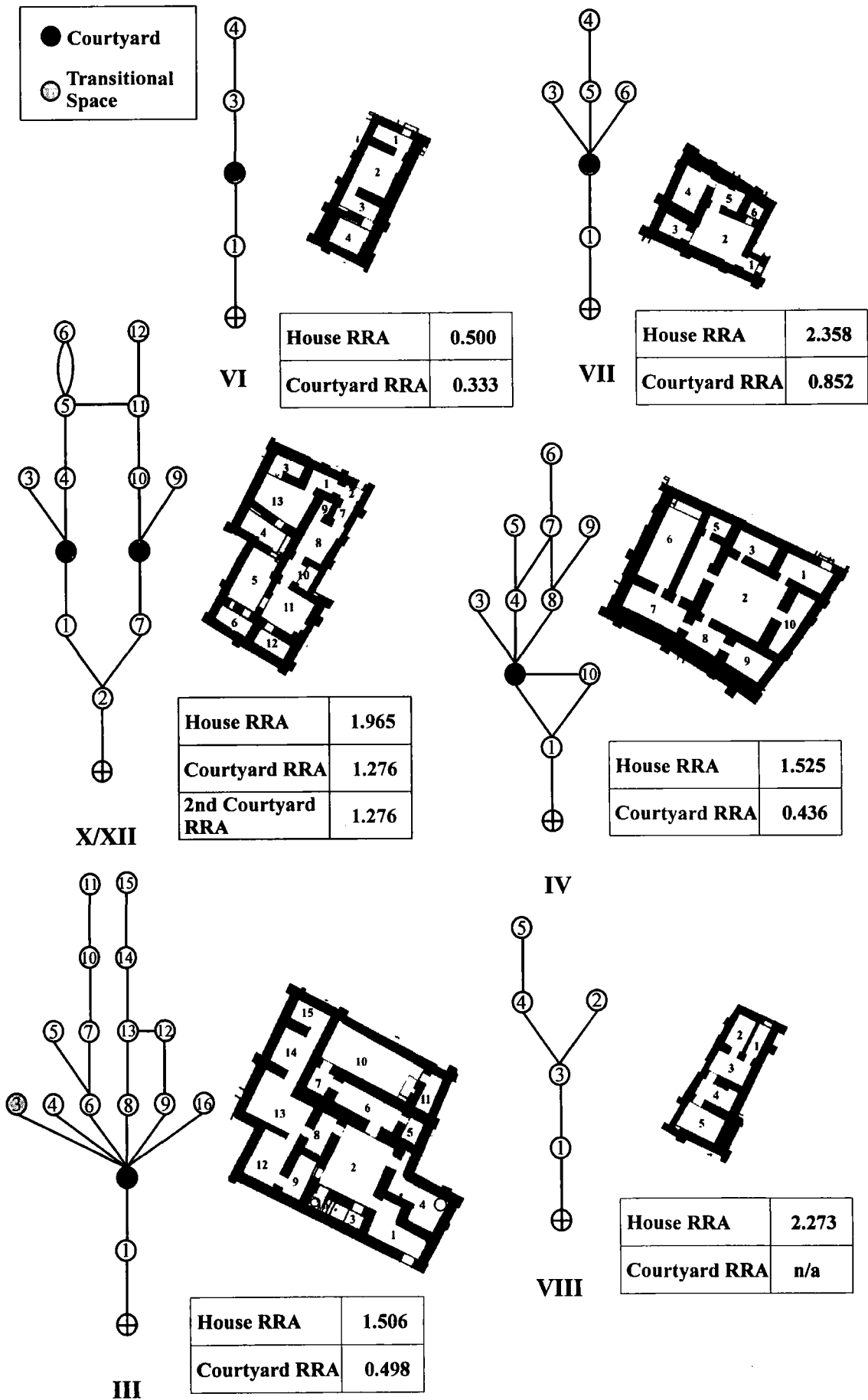
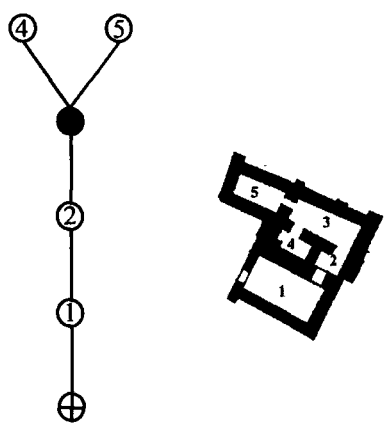
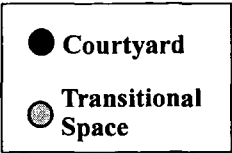
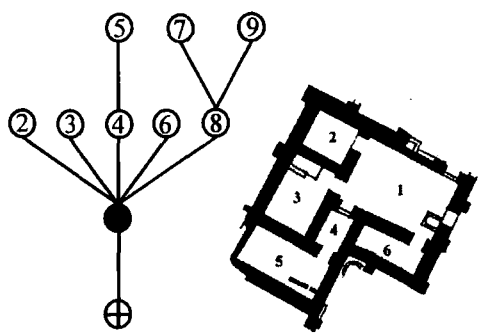


Fig. 3.95. Permeability map and RRA values for Houses in Ur AH, Straight Street.



III

House RRA	1.705
Courtyard RRA	0.852



IV

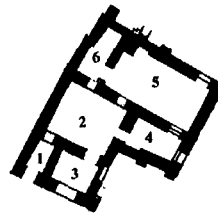
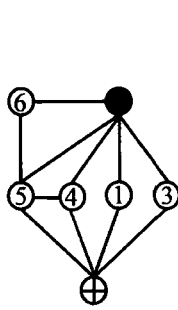
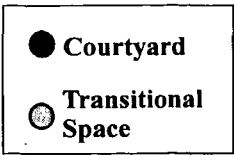
House RRA	0.964
Courtyard RRA	0.263



V

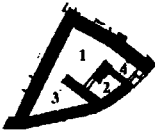
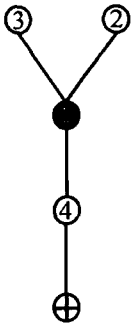
House RRA	1
Courtyard RRA	0.333

Fig. 3.96. Permeability map and RRA values for Houses in Ur AH, Niche Lane.



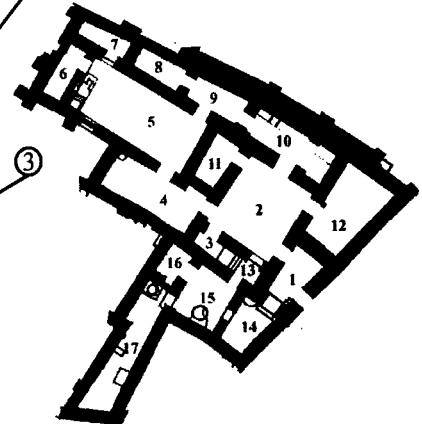
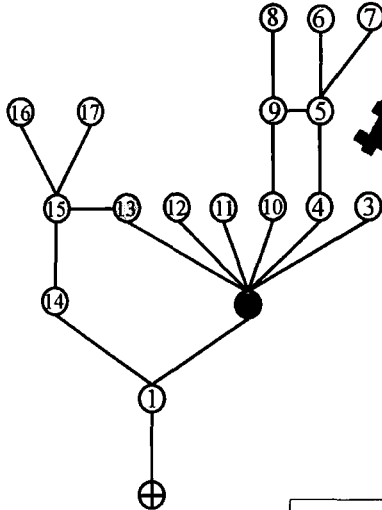
House RRA	0.344
Courtyard RRA	0.191

XIV



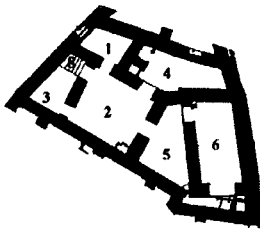
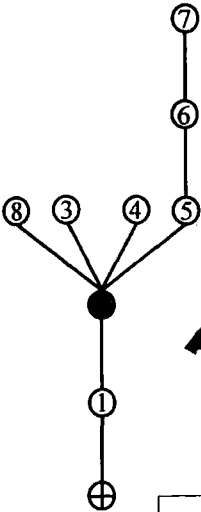
VI

House RRA	0.833
Courtyard RRA	0.167



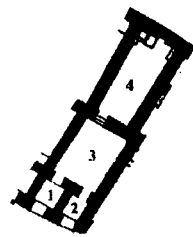
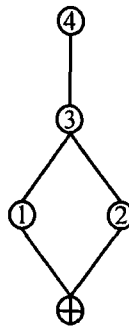
IV

House RRA	1.143
Courtyard RRA	0.452



III

House RRA	1.742
Courtyard RRA	0.436



VIII/X

House RRA	0.500
Courtyard RRA	n/a

Fig. 3.97. Permeability map and RRA values for Houses in Ur AH, Paternoster Row.

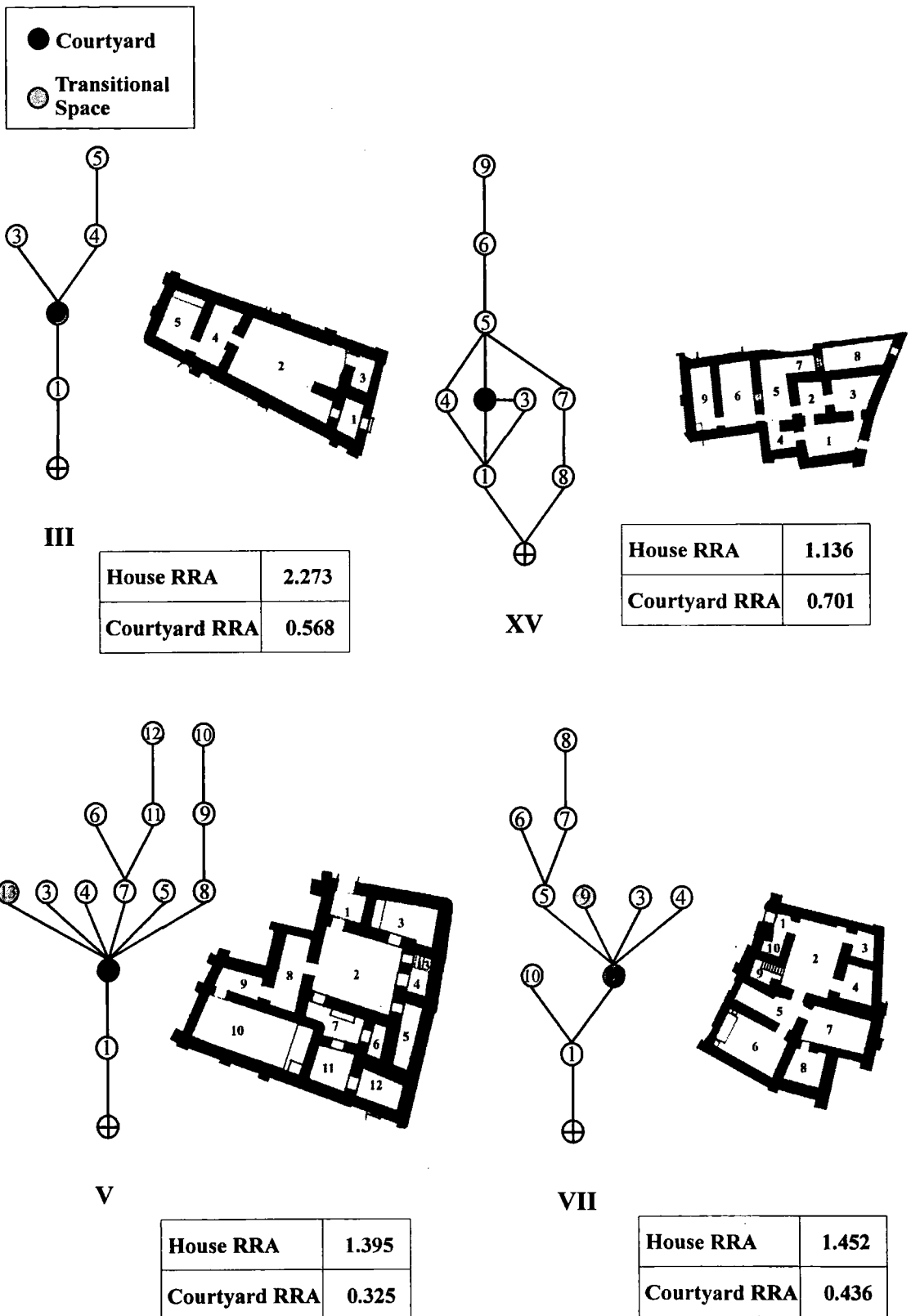
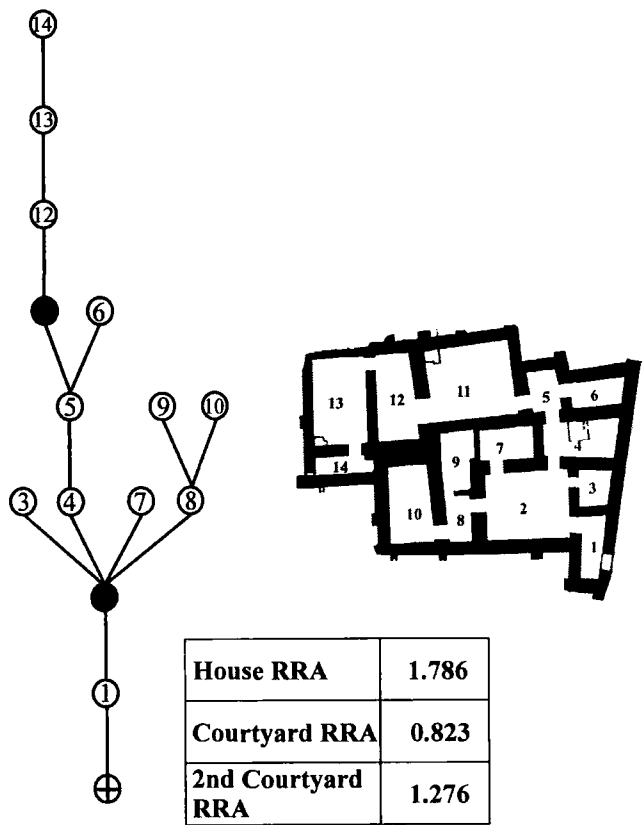
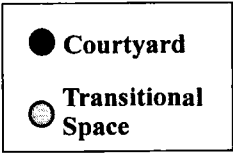


Fig. 3.98. Permeability map and RRA values for Houses in Ur AH, Church Lane.



XIII

Fig. 3.99. Permeability map and RRA values for Houses in Ur AH, Church Lane.

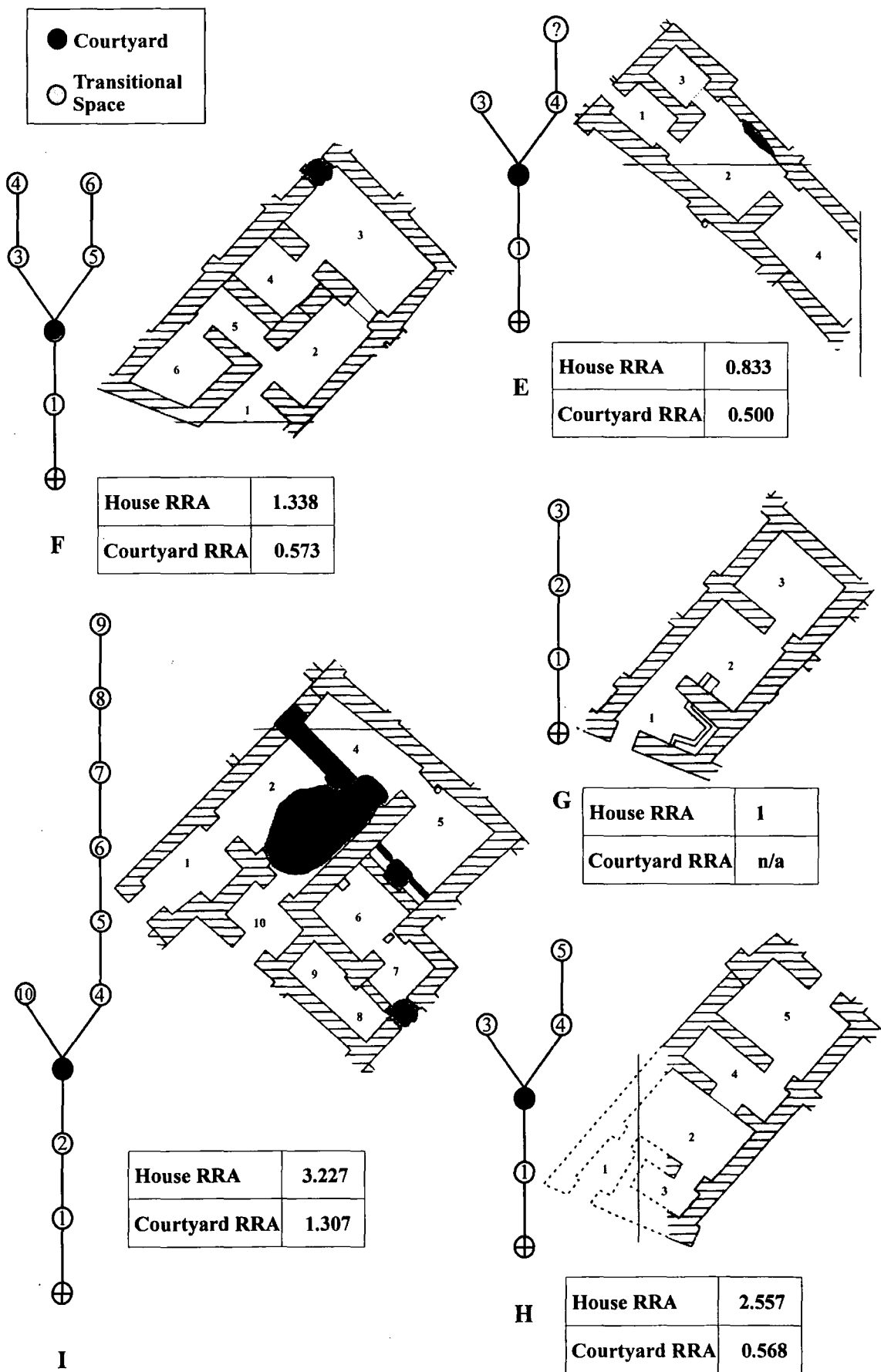
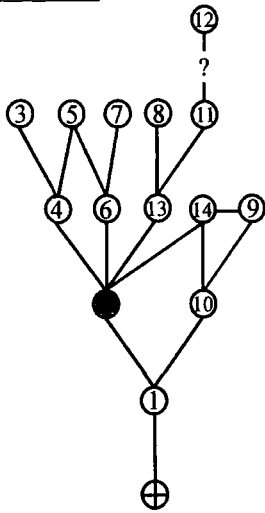
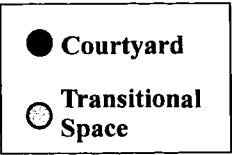
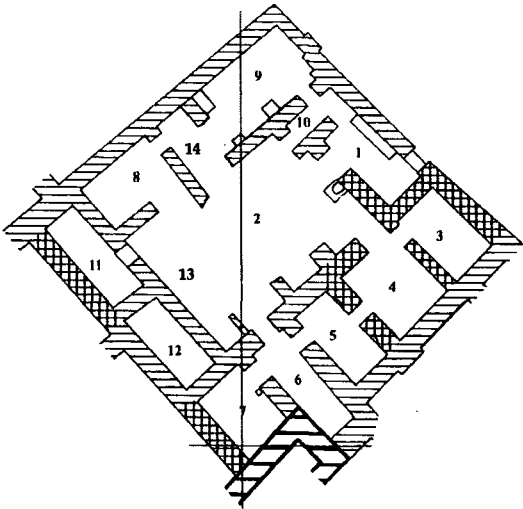


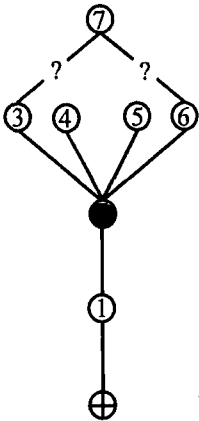
Fig. 3.100. Permeability map and RRA values for Houses in Nippur TA.



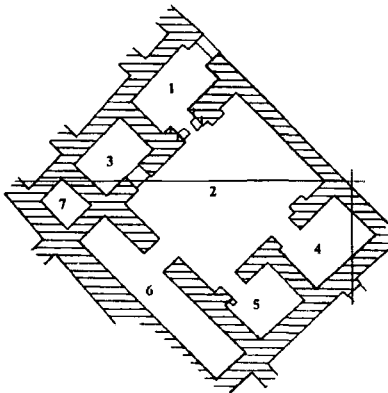
C



House RRA	1.276
Courtyard RRA	0.319



D



House RRA	1.680
Courtyard RRA	0.280

Fig. 3.101. Permeability map and RRA values for Houses in Nippur TB.

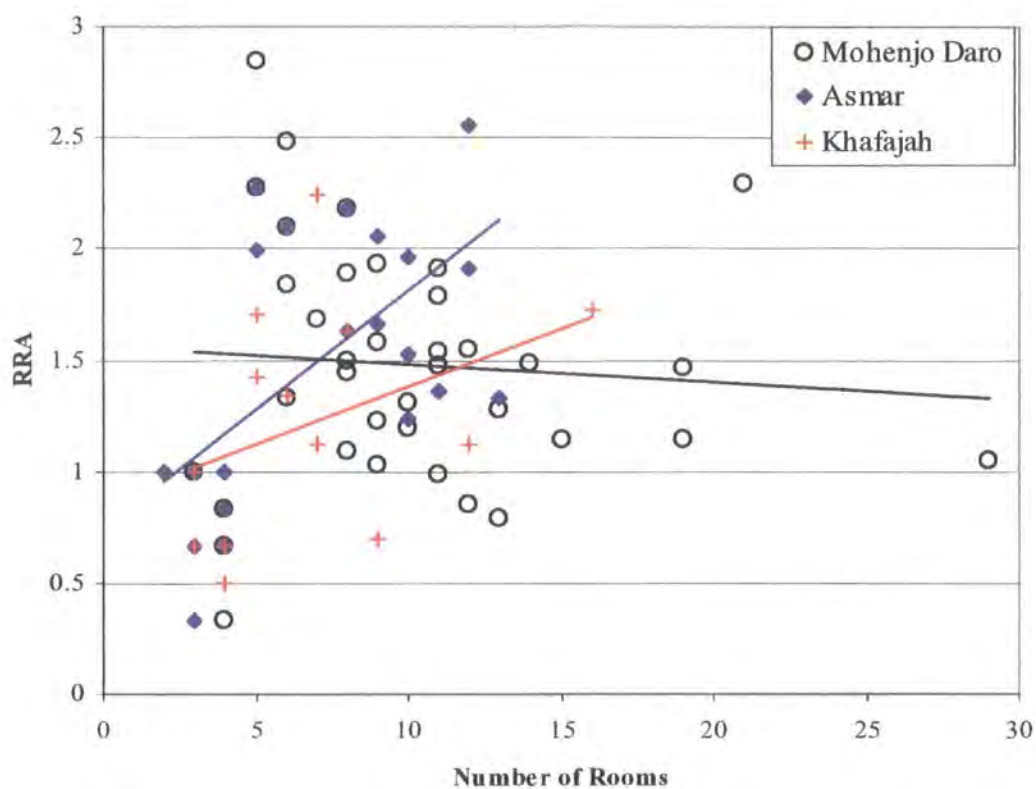


Fig. 3.102. RRA values for buildings at Mohenjo Daro, Asmar and Khafajah.

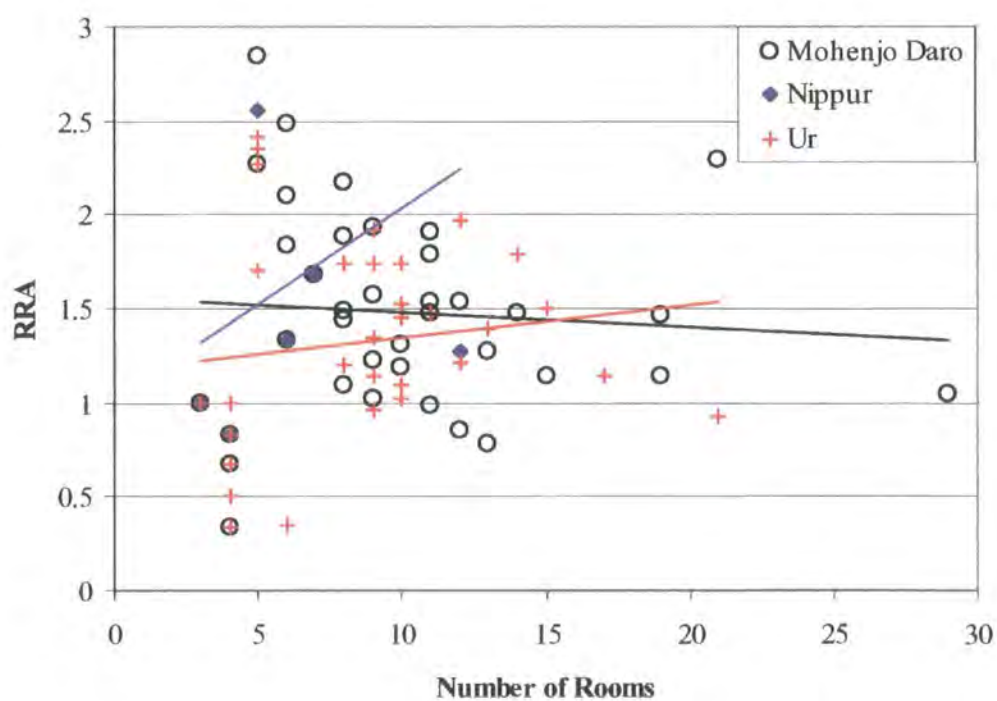


Fig. 3.103. RRA values for buildings at Mohenjo Daro, Nippur and Ur.

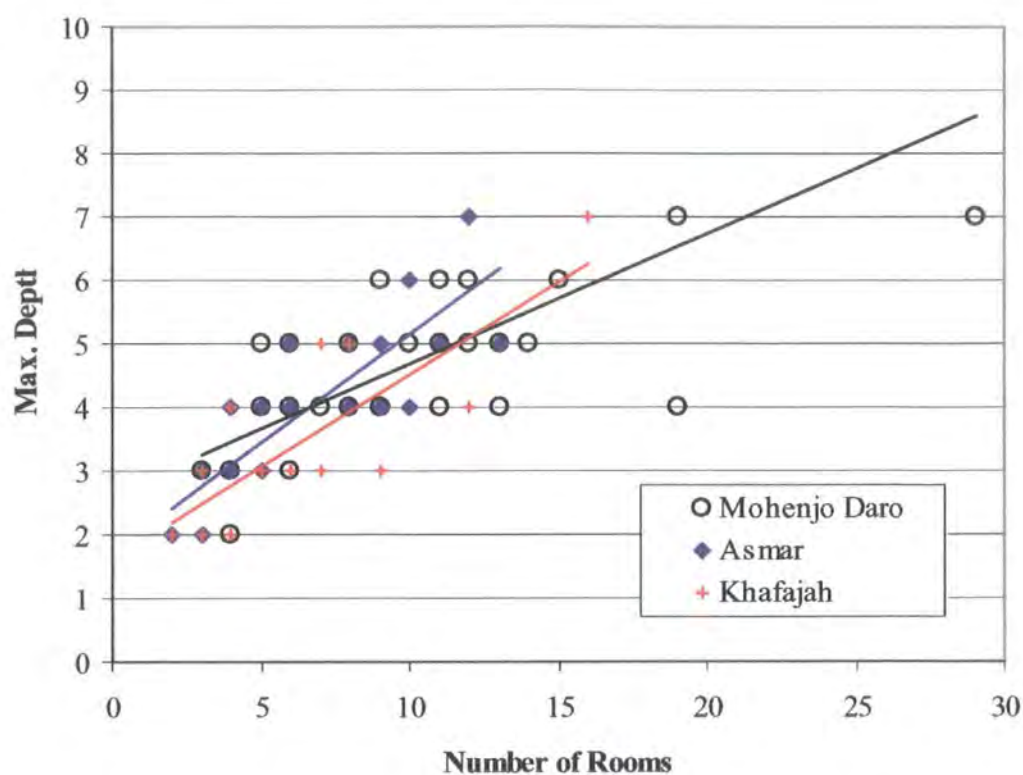


Fig. 3.104. Maximum depth values for buildings at Mohenjo Daro, Asmar and Khafajah.

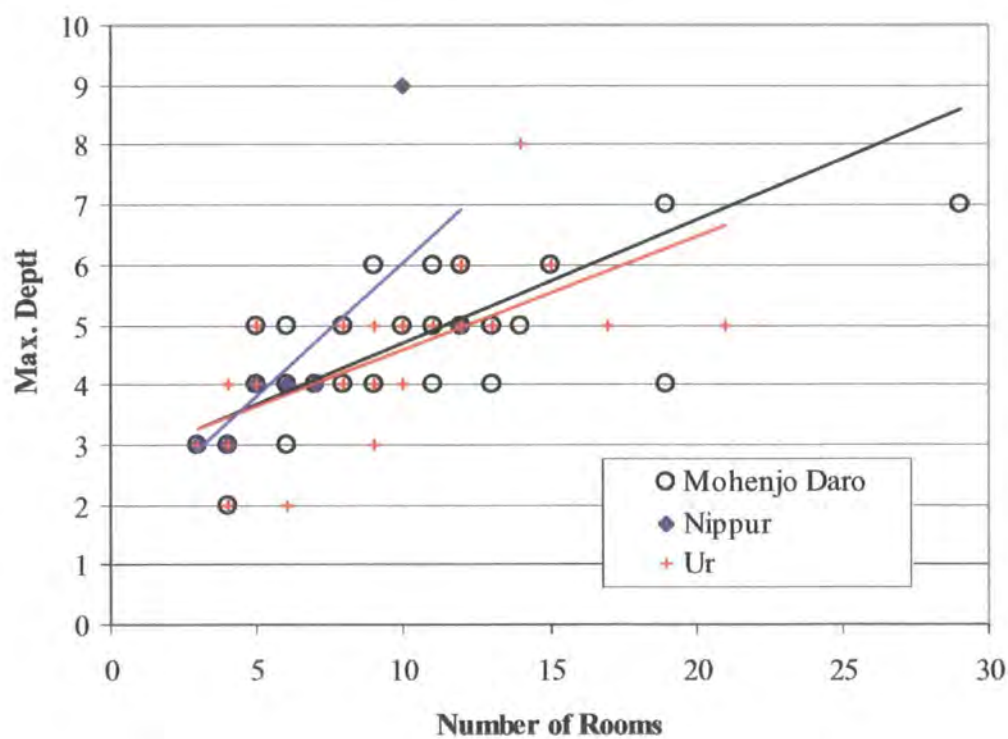


Fig. 3.105. Maximum depth values for buildings at Mohenjo Daro, Nippur and Ur.

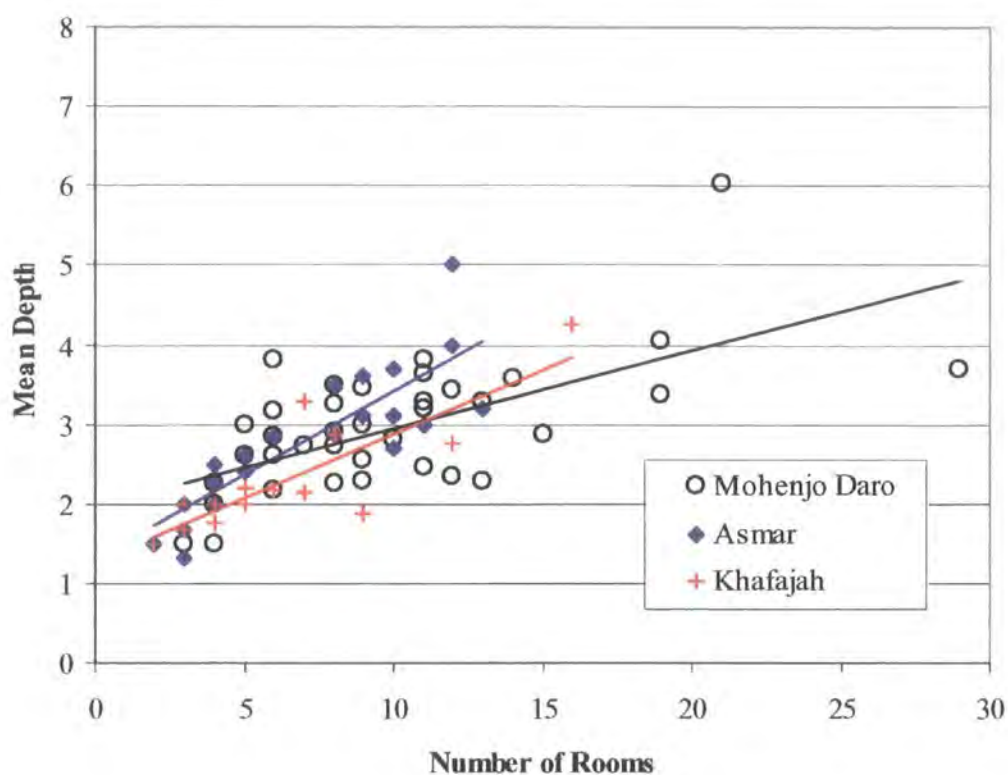


Fig. 3.106. Mean depth values for buildings at Mohenjo Daro, Asmar and Khafajah.

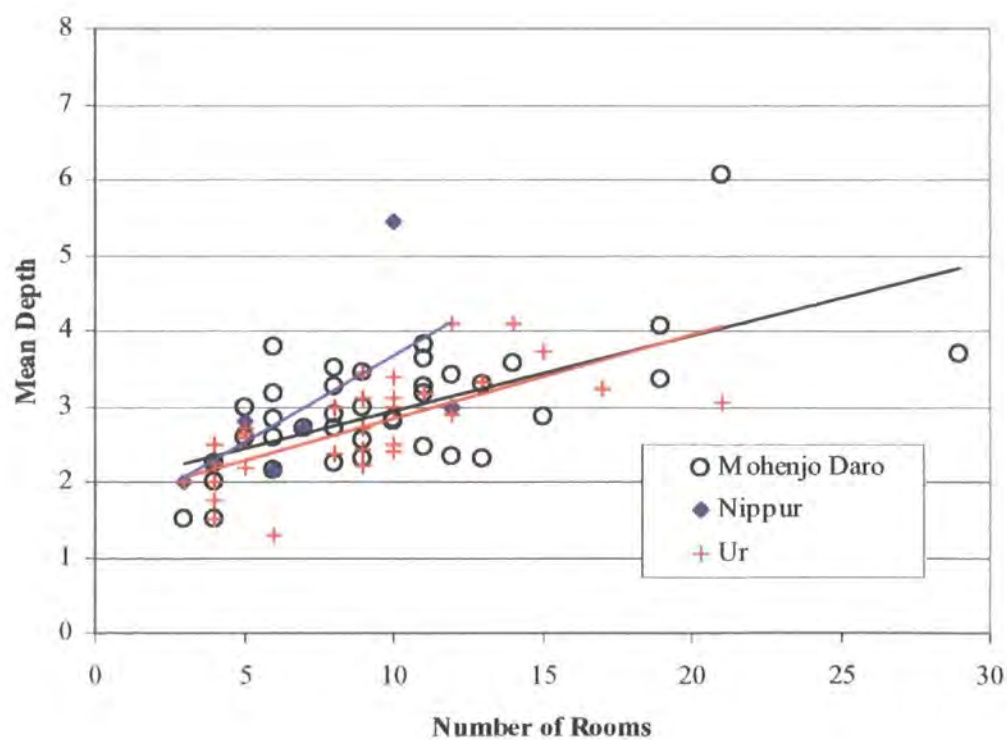


Fig. 3.107. Mean depth values for buildings at Mohenjo Daro, Nippur and Ur.

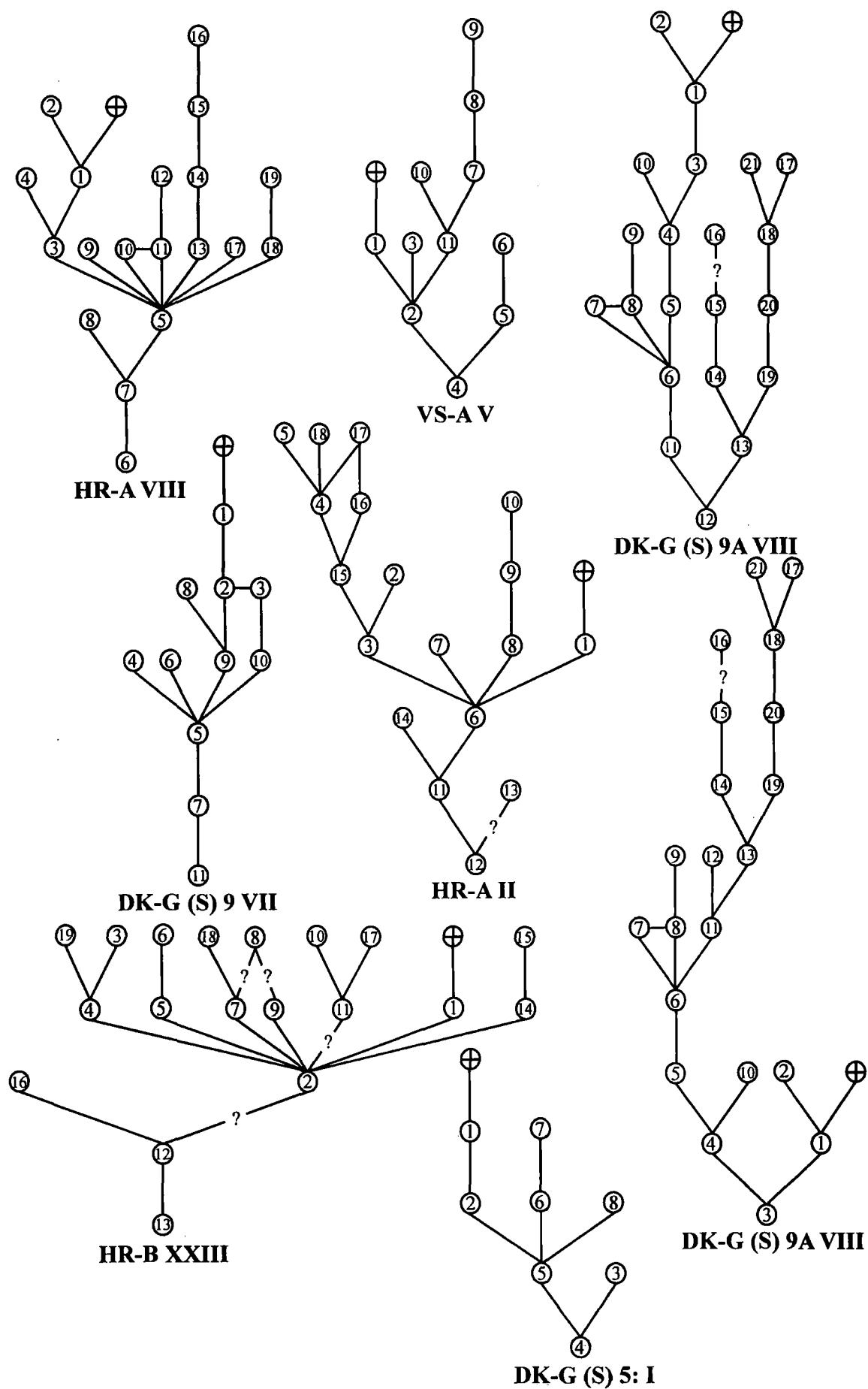


Fig. 3.108. Permeability maps for 'bathing platforms' at Mohenjo Daro.

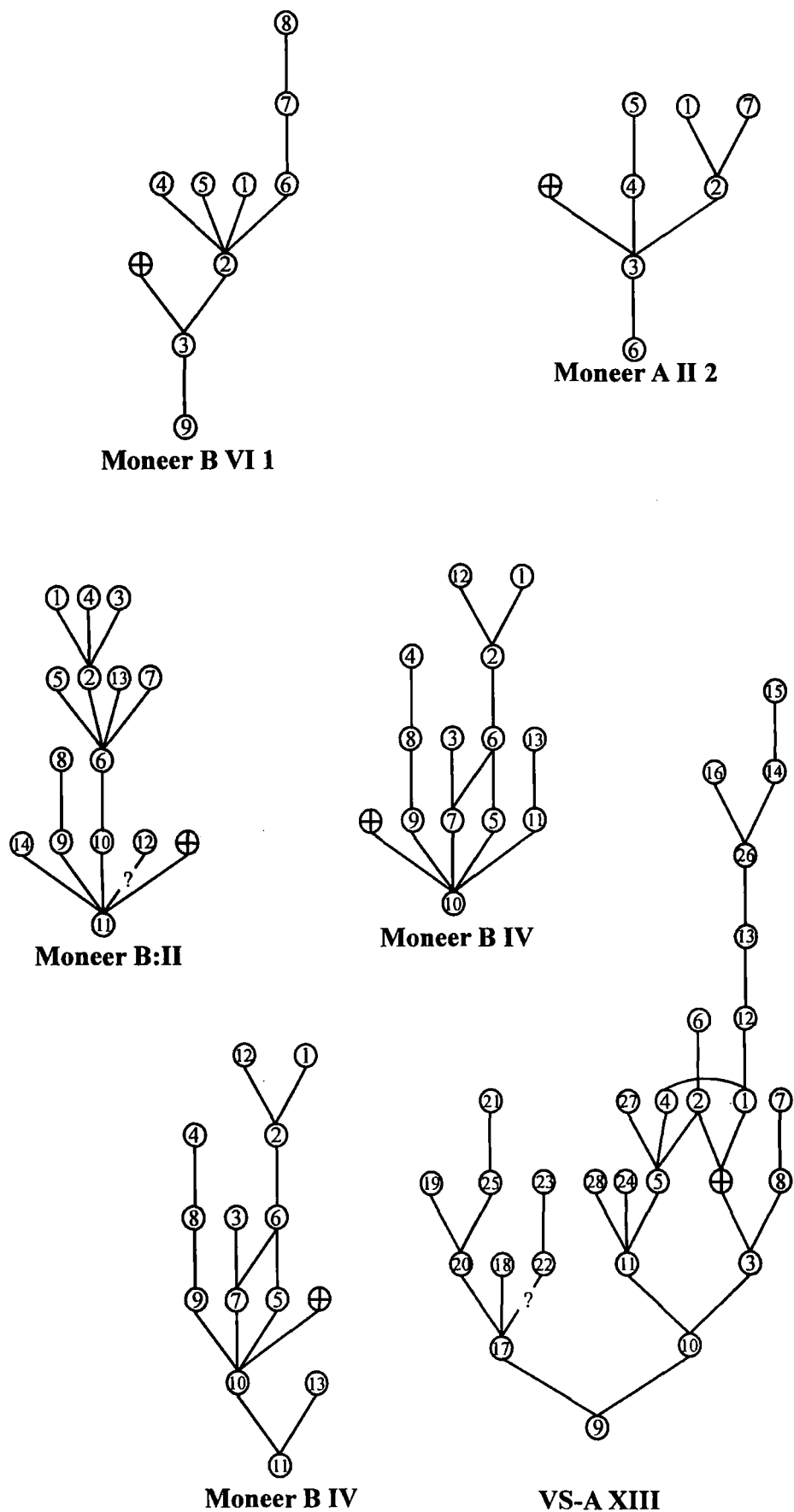


Fig. 3.109. Permeability maps for 'bathing platforms' at Mohenjo Daro.

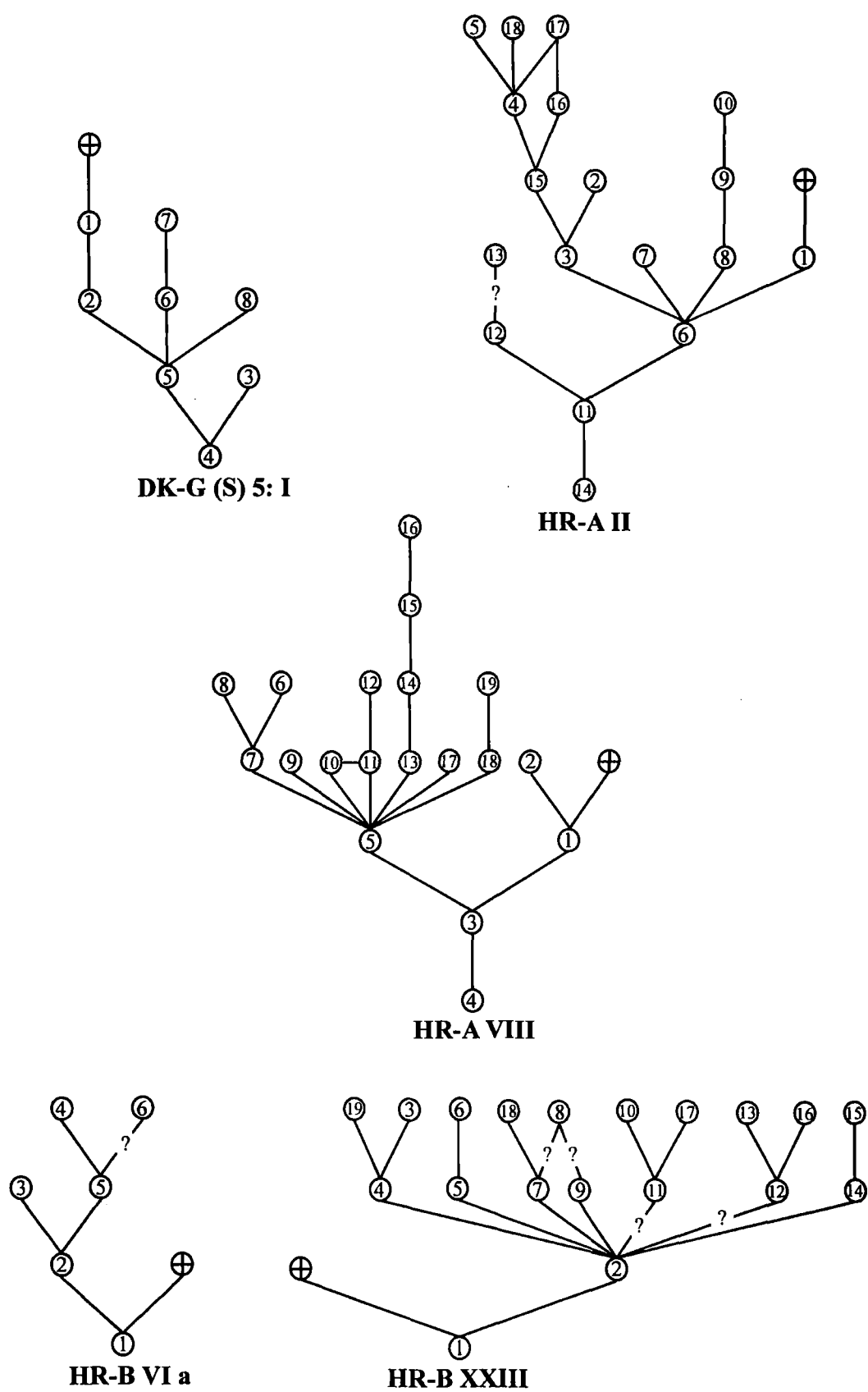


Fig. 3.110. Permeability maps for wells at Mohenjo Daro.

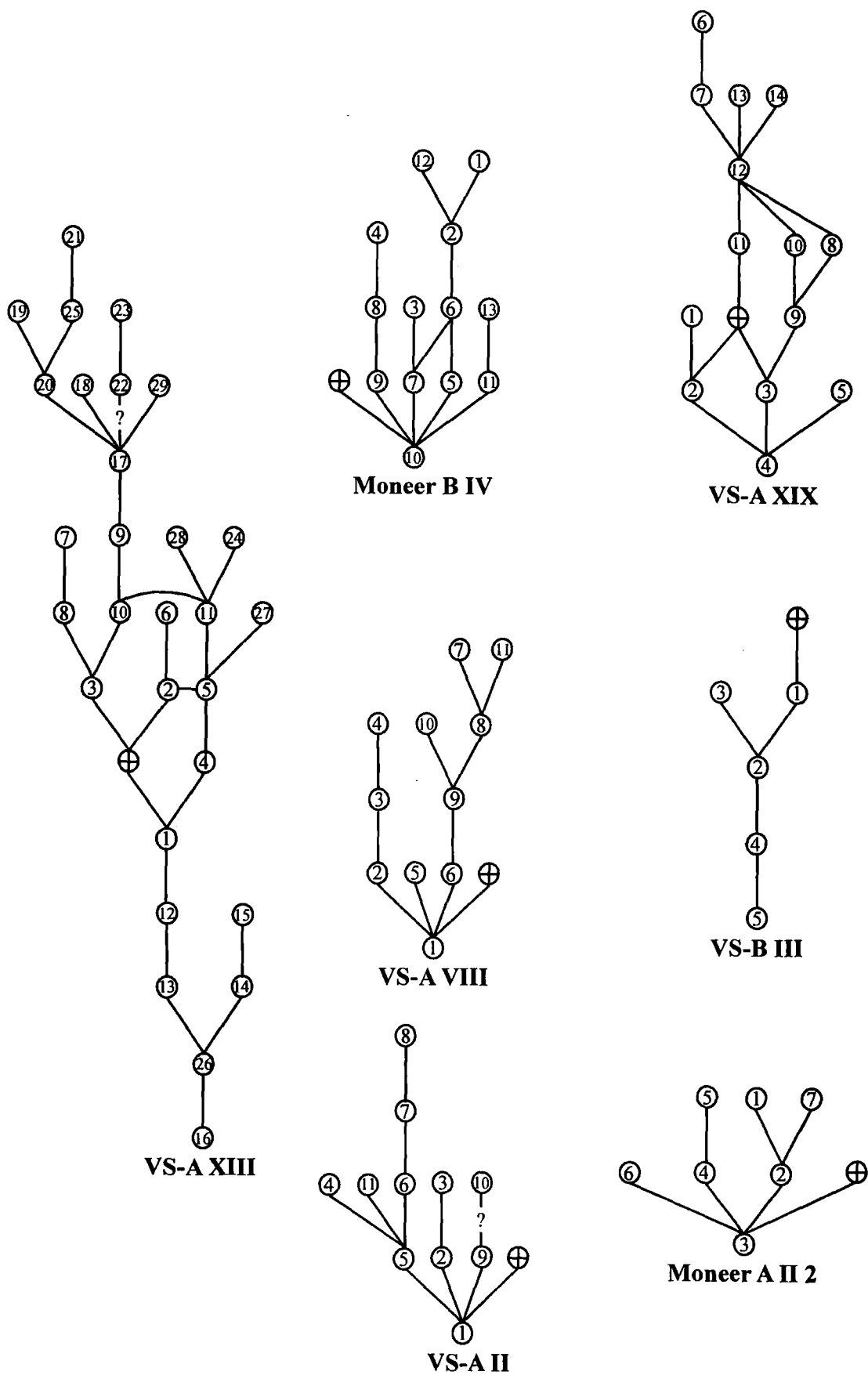


Fig. 3.111. Permeability maps for wells at Mohenjo Daro.

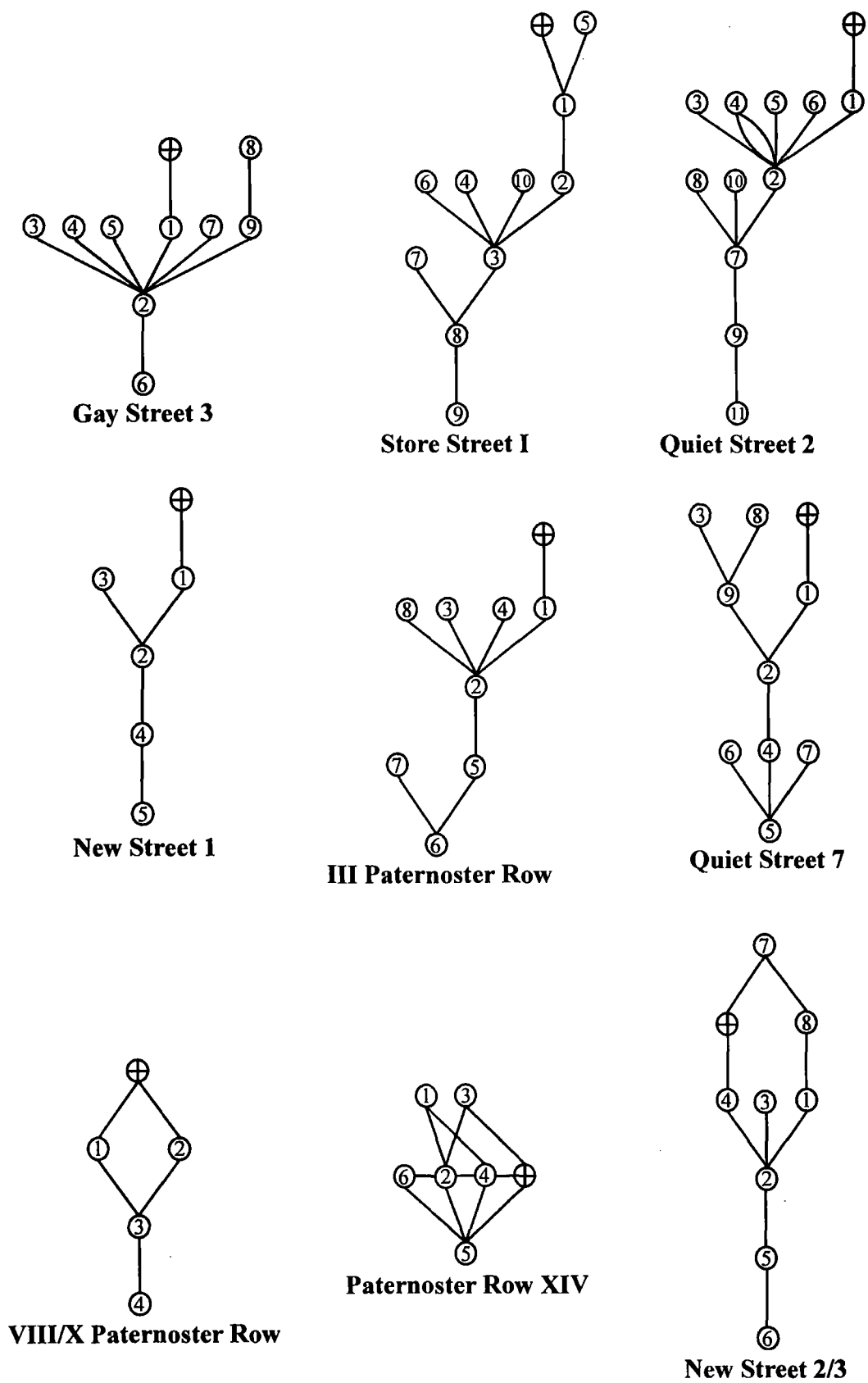
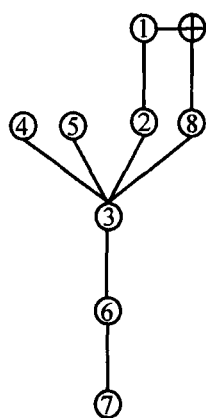
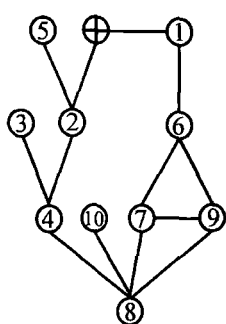


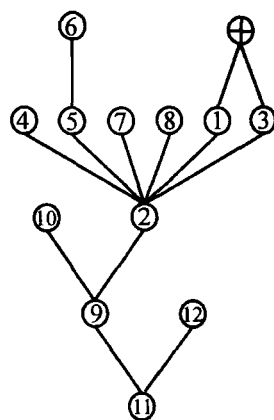
Fig. 3.112. Permeability maps for 'chapels' at Ur.



I Old Street



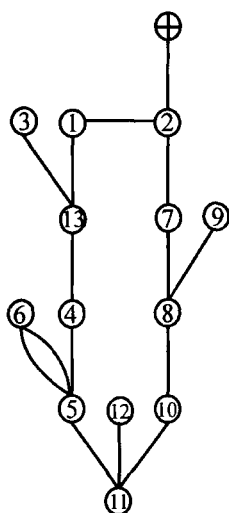
I Broad Street



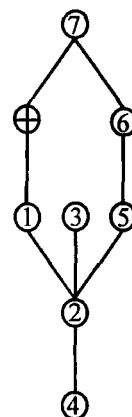
I/III Boundary Street



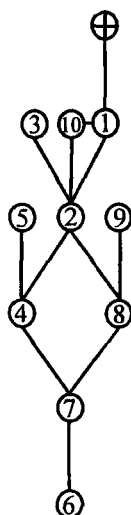
V Niche Lane



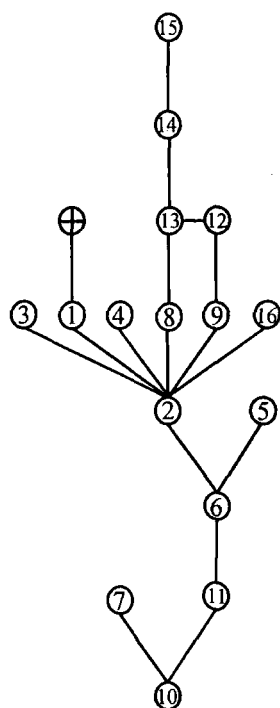
X/XII Straight Street



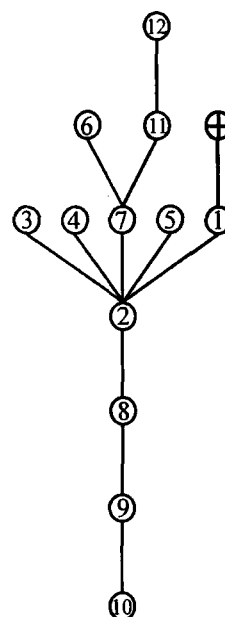
I Church Street



IV Straight Street



III Straight Street



V Church Street

Fig. 3.113. Permeability maps for 'chapels' at Ur.

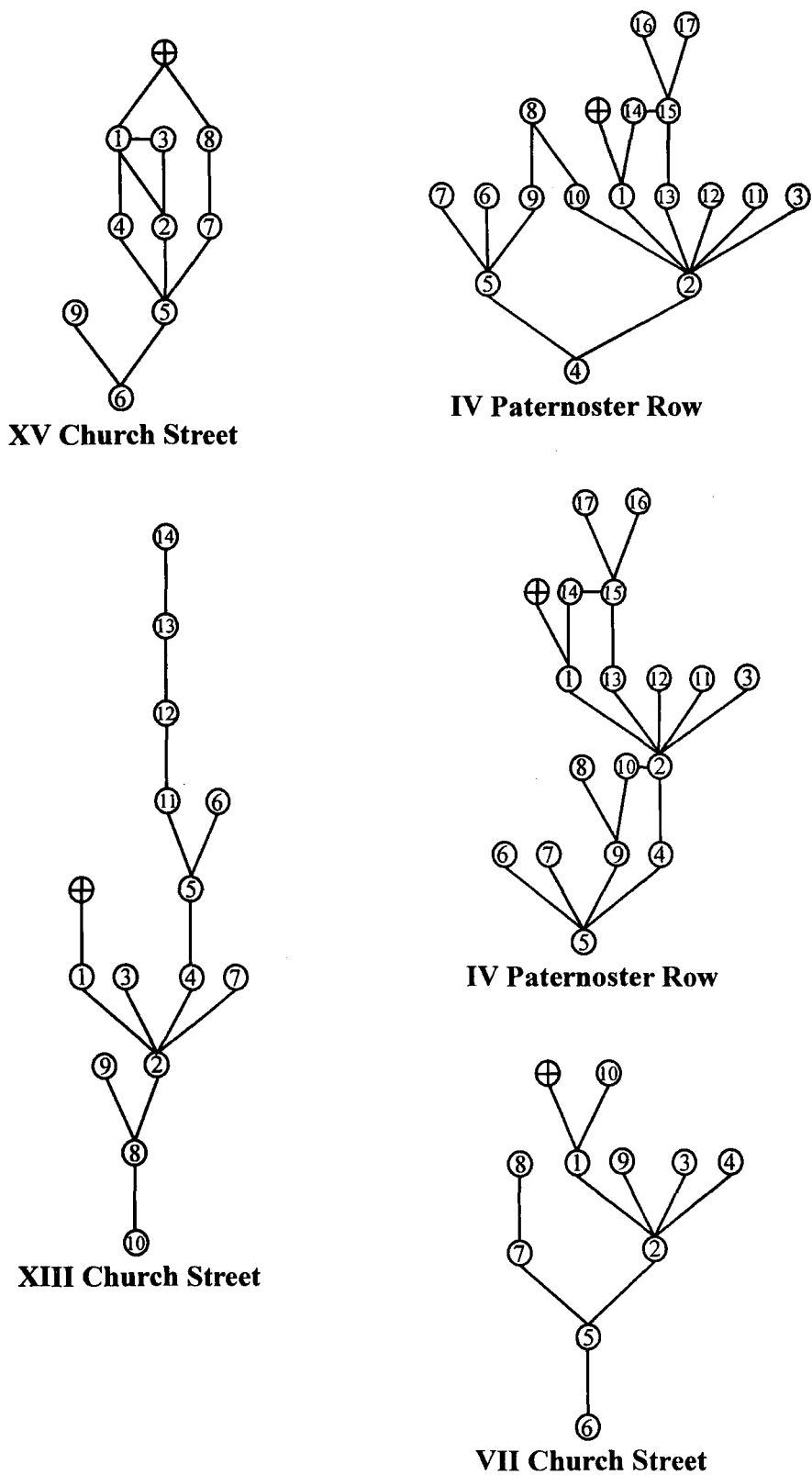


Fig. 3.114. Permeability maps for 'chapels' at Ur.

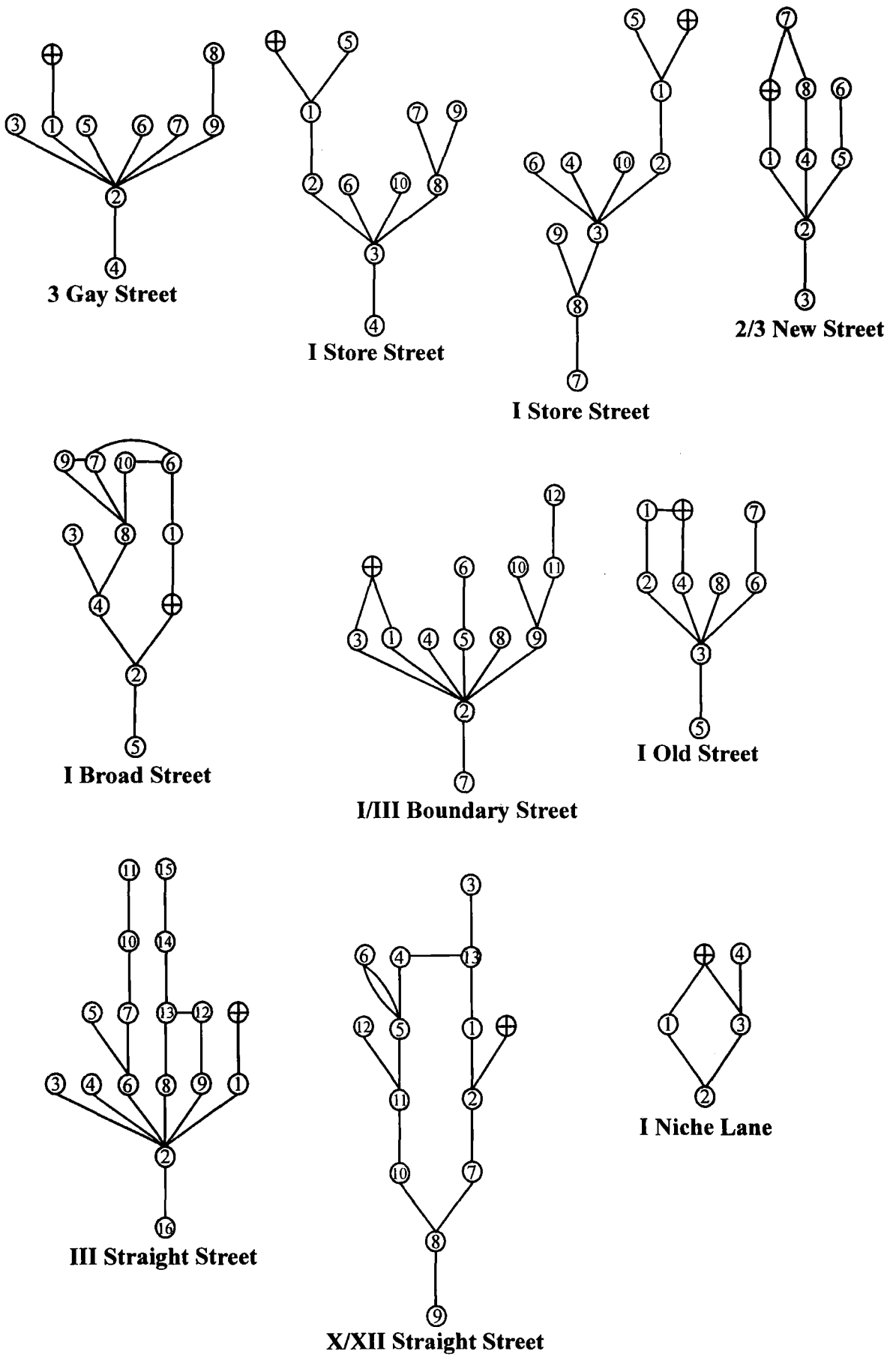


Fig. 3.115. Permeability maps for toilets at Ur.



Fig. 3.116. Permeability maps for toilets at Ur.

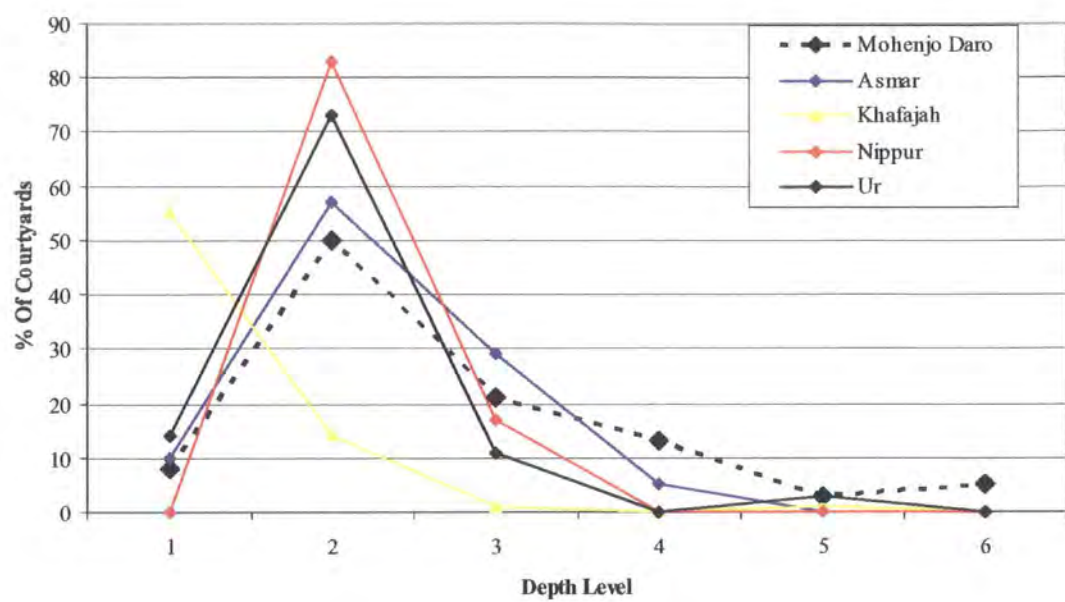


Fig. 3.117. Depth levels of courtyards.

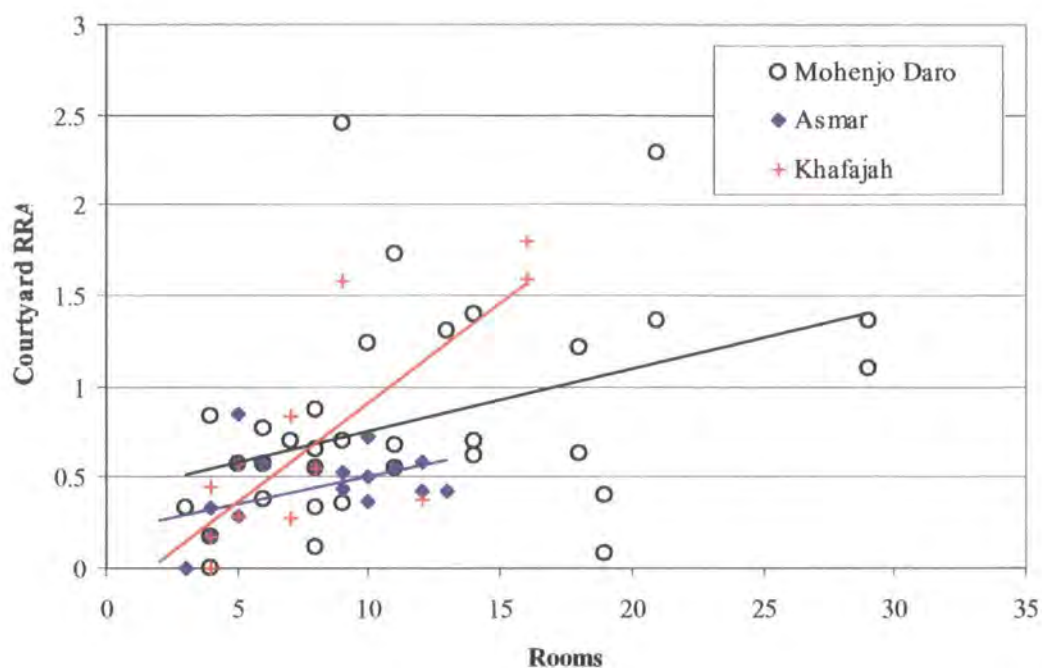


Fig. 3.118. RRA values for courtyards at Asmar, Khafajah and Mohenjo Daro.

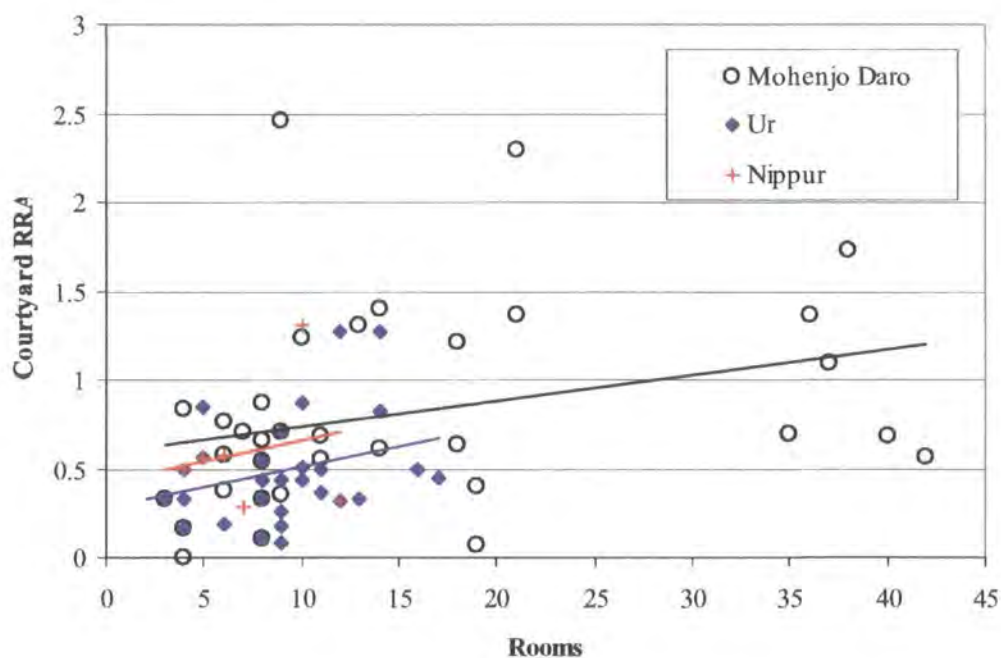


Fig. 3.119. RRA values for courtyards at Ur, Nippur and Mohenjo Daro.

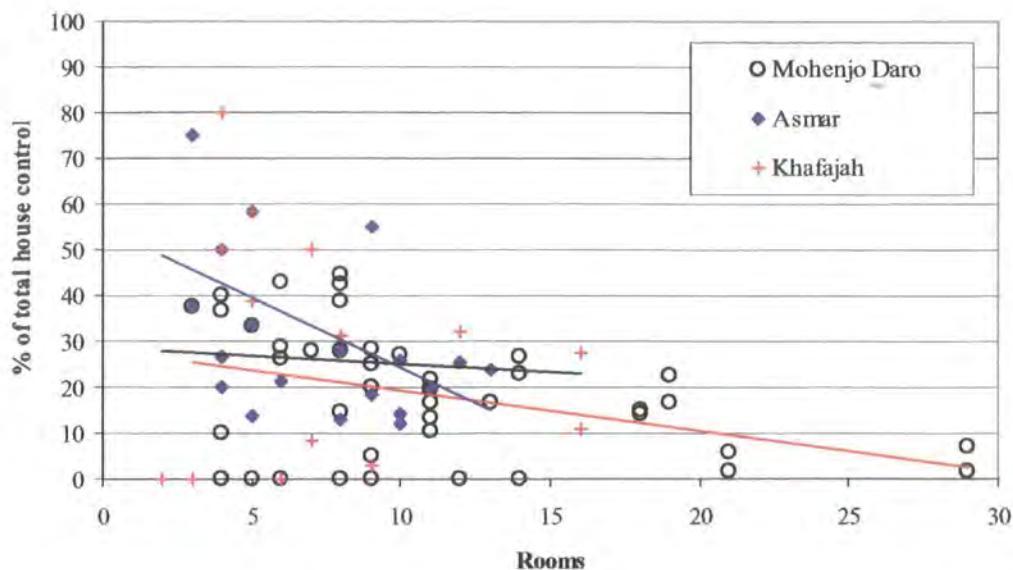


Fig. 3.120. % of the total control value for the building held by courtyards at Mohenjo Daro, Asmar and Khafajah.

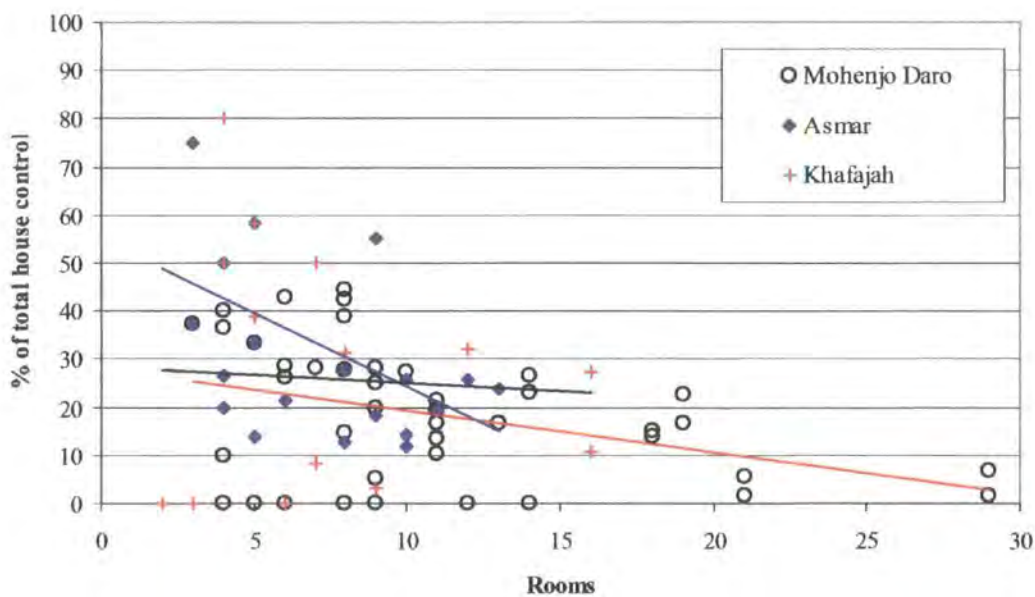


Fig. 3.121. % of the total control value for the building held by courtyards at Mohenjo Daro, Ur and Nippur.

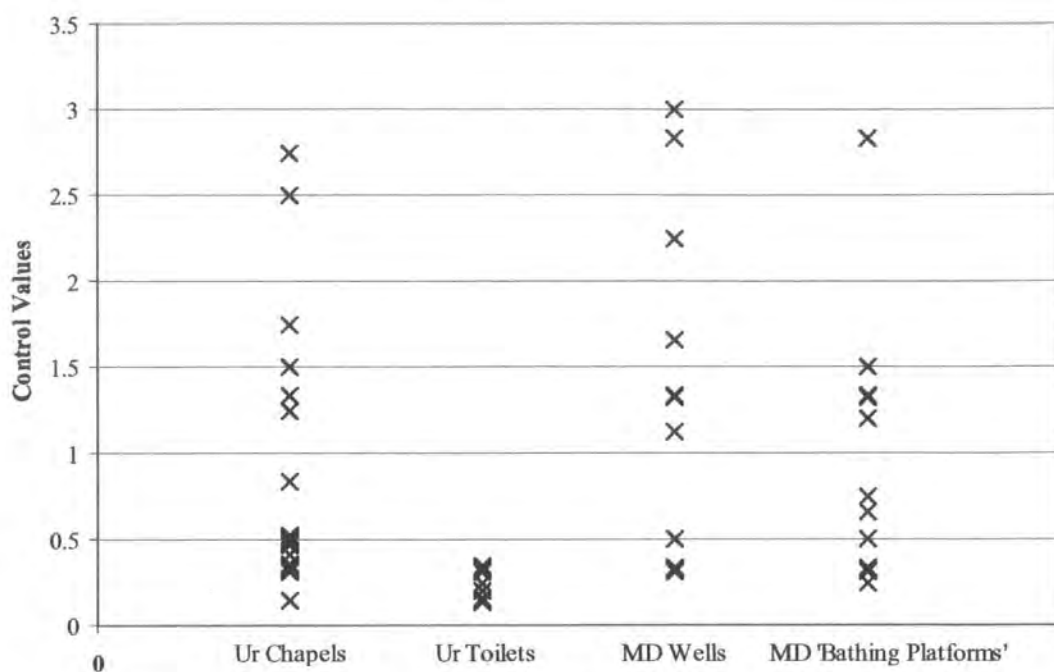


Fig. 3.122. Comparison of the control values of different facilities at Ur and Mohenjo Daro.

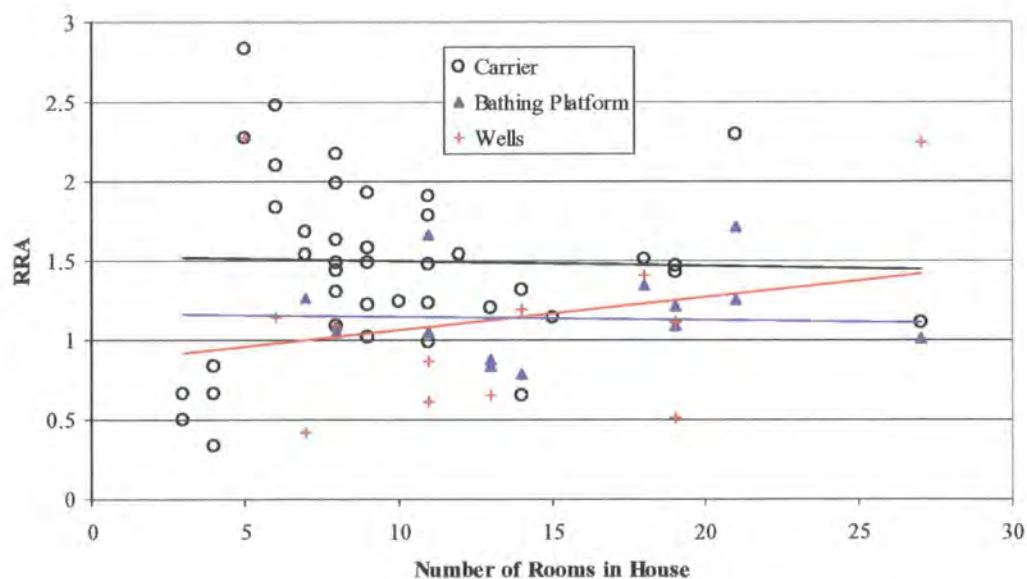


Fig. 3.123. RRA Values from different points within buildings at Mohenjo Daro.

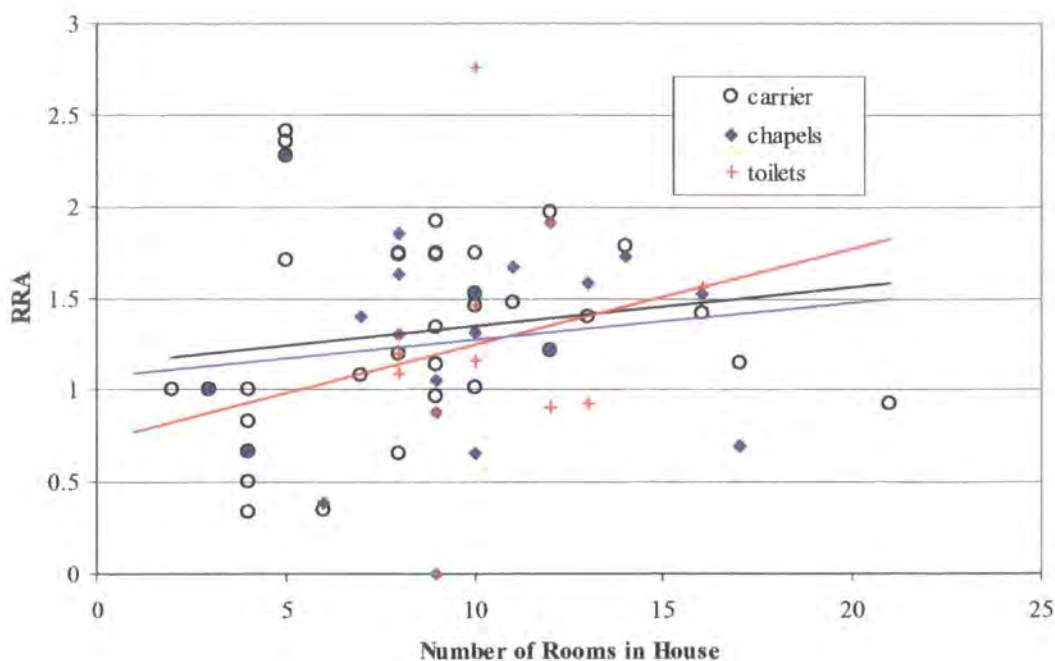


Fig. 3.124. RRA Values from different points within buildings at Ur.

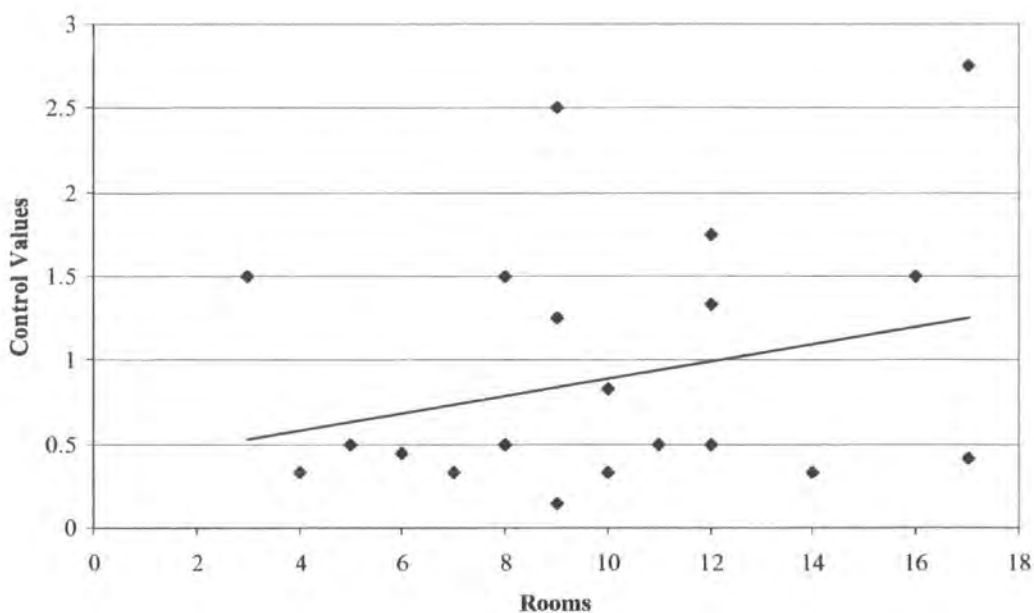
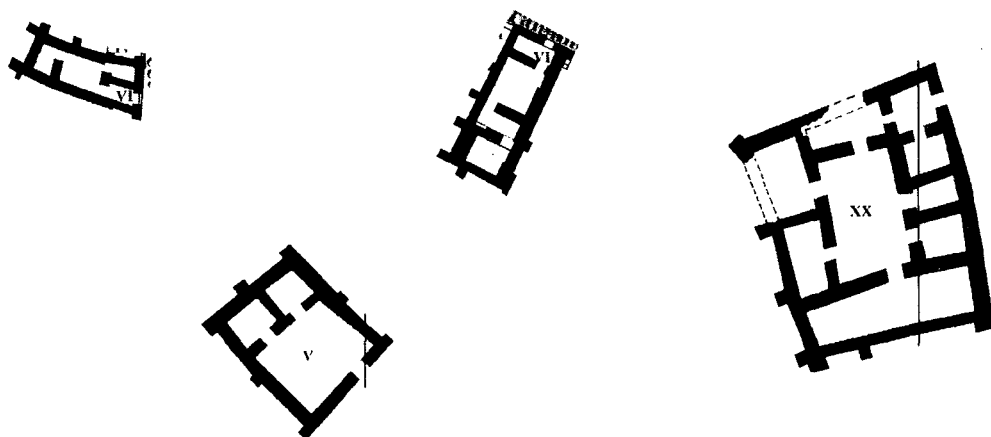


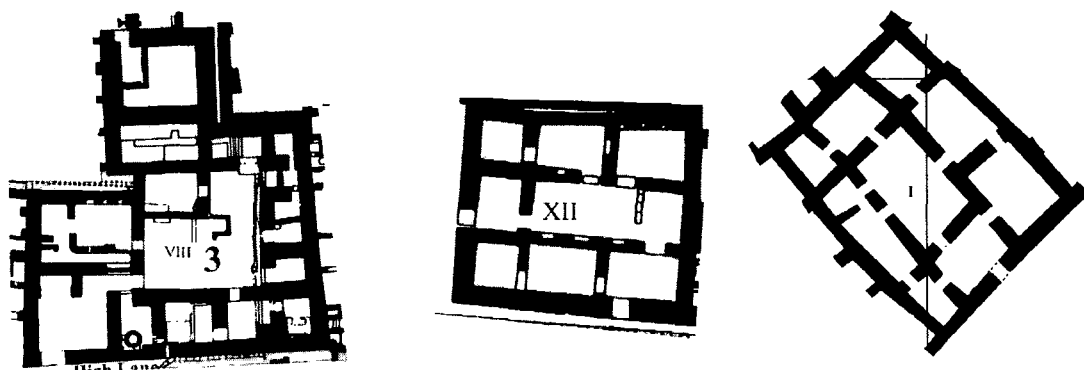
Fig. 3.125. The trend for 'chapels' at Ur with higher control values to derive from buildings with more rooms.



'Stalls'



Nuclear family houses with one suite of rooms



Extended family houses with more than one suite of rooms

Fig. 3.126. Examples of 'stalls' 'extended family' houses and 'nuclear family' houses.



Fig. 4.1. 'Dancing Girl' figurine from Mohenjo Daro.

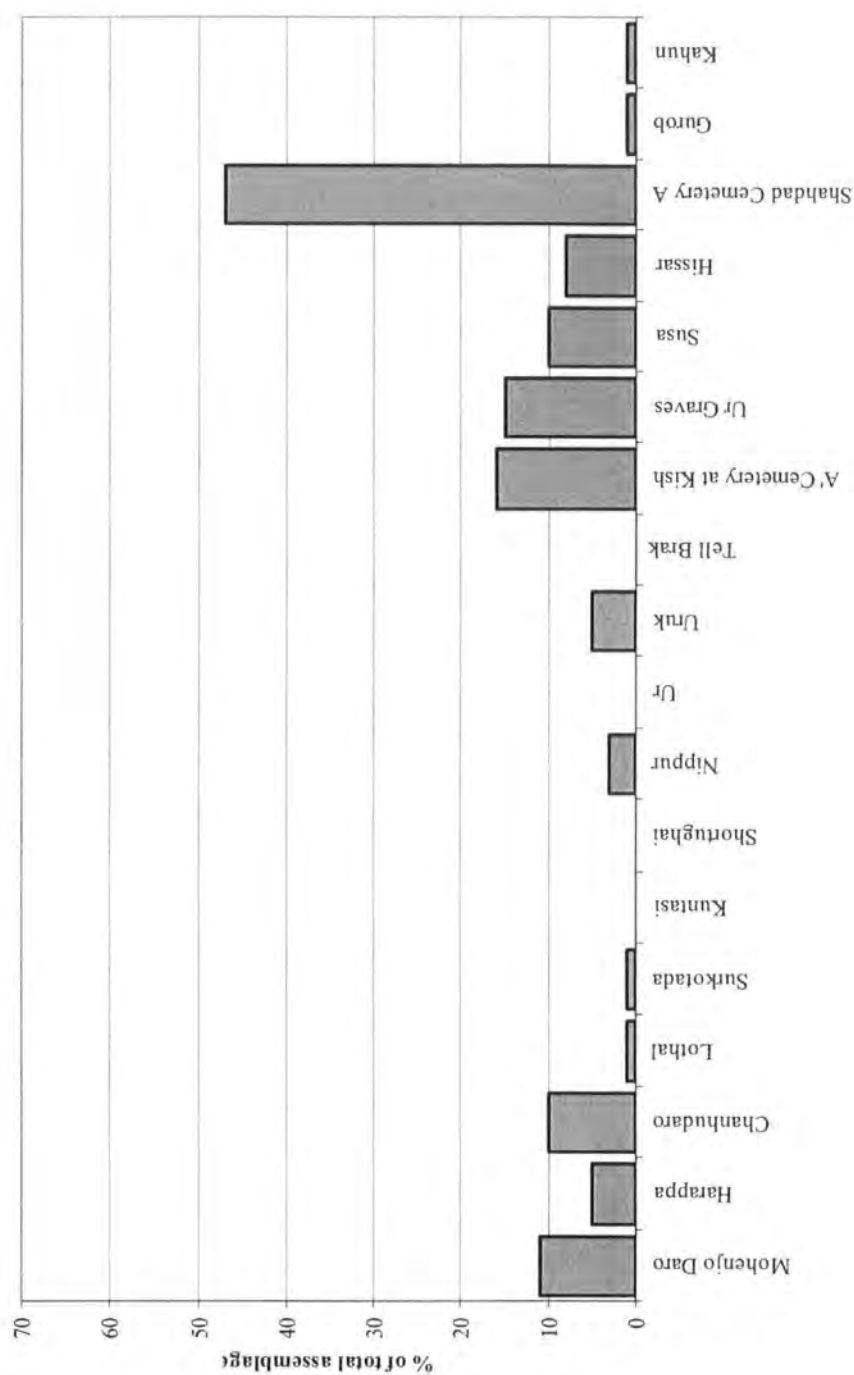
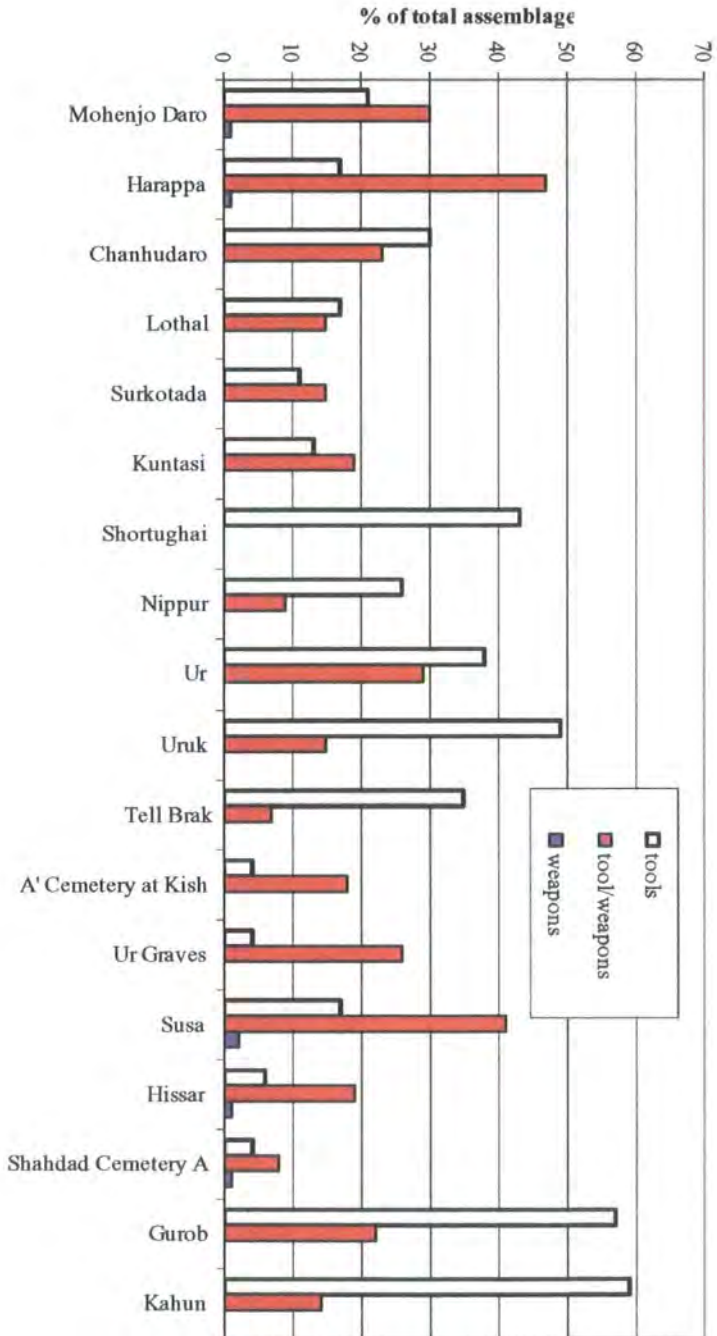


Fig 4.2. The proportion of metalwork at sites falling into the 'vessels' category.

Fig 4.3. Proportion of overall assemblage composed of 'tools', 'tool/weapons' and 'weapons' at each site.



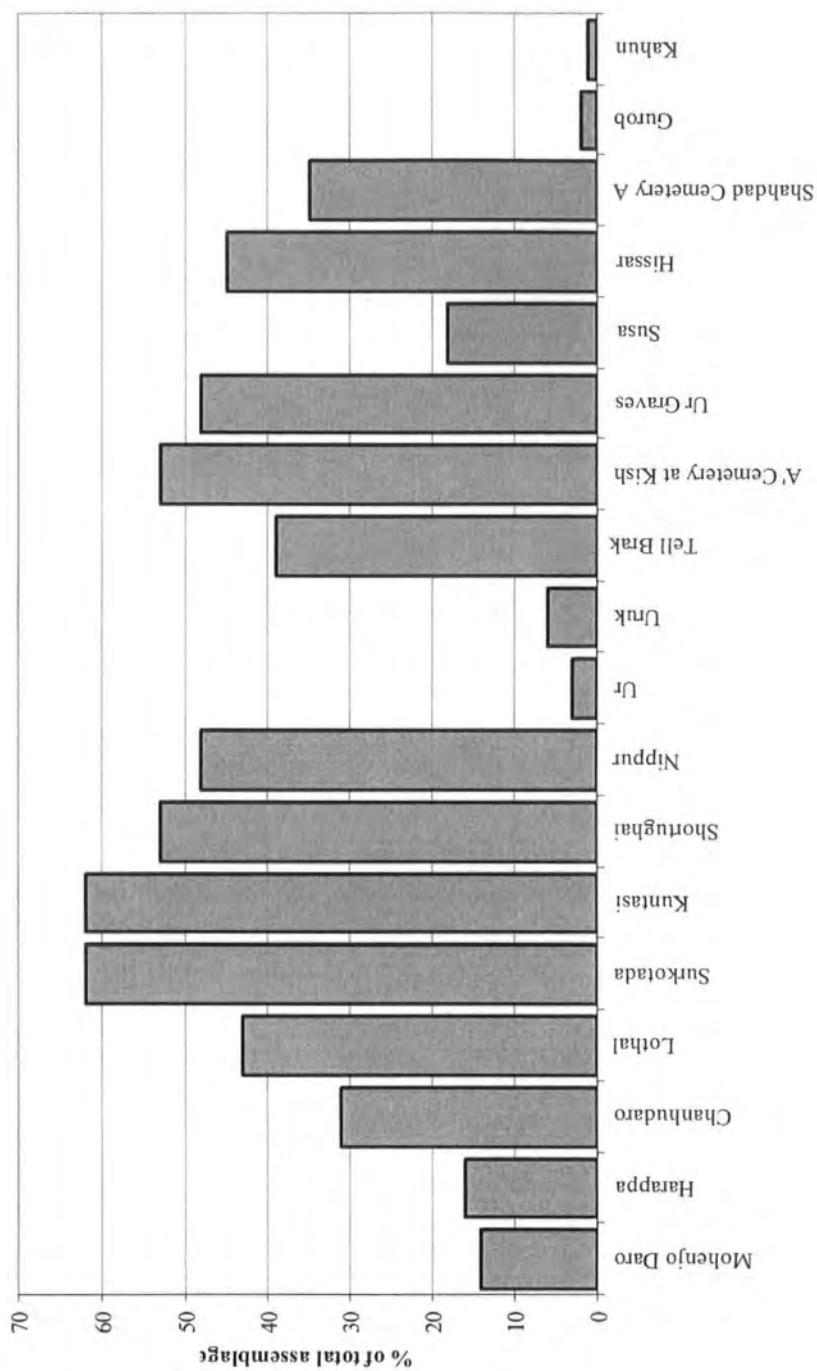
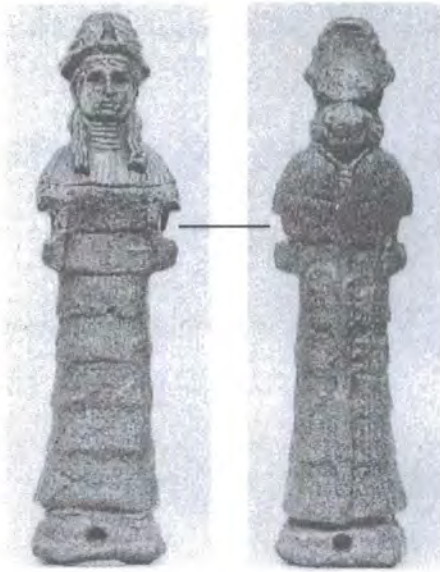


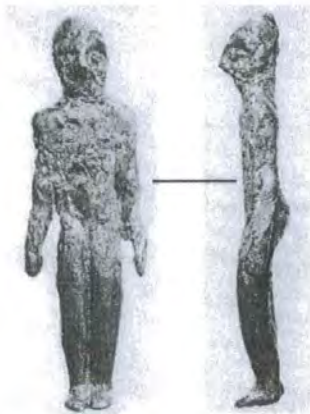
Fig 4.4. The proportion of metalwork at sites falling into the 'personal adornment' category.



Ur- Hendur-sag figurine



Uruk- foundation deposit statuette

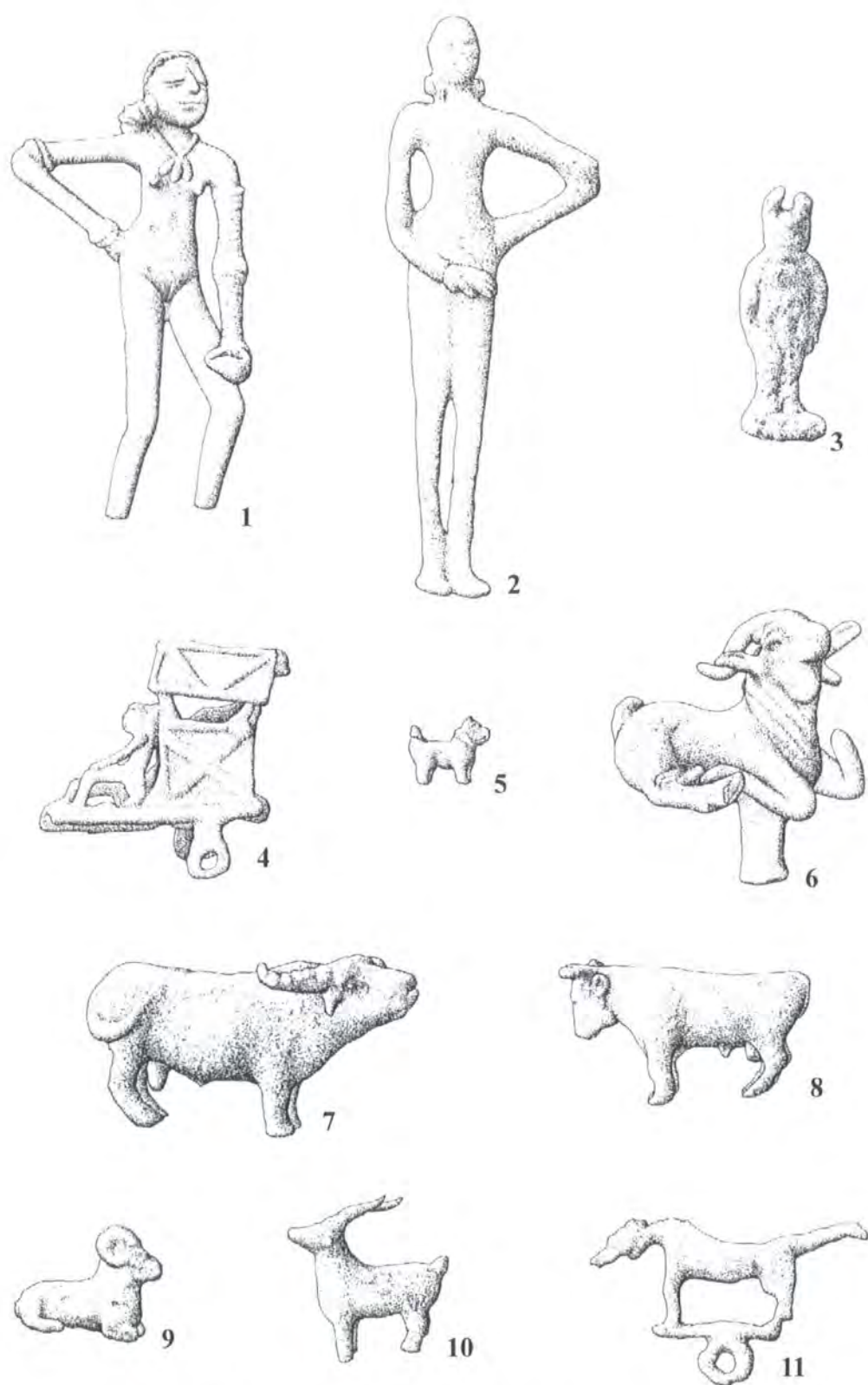


Susa- foundation deposits (above) and male statue.



Hissar- animal and male figurines

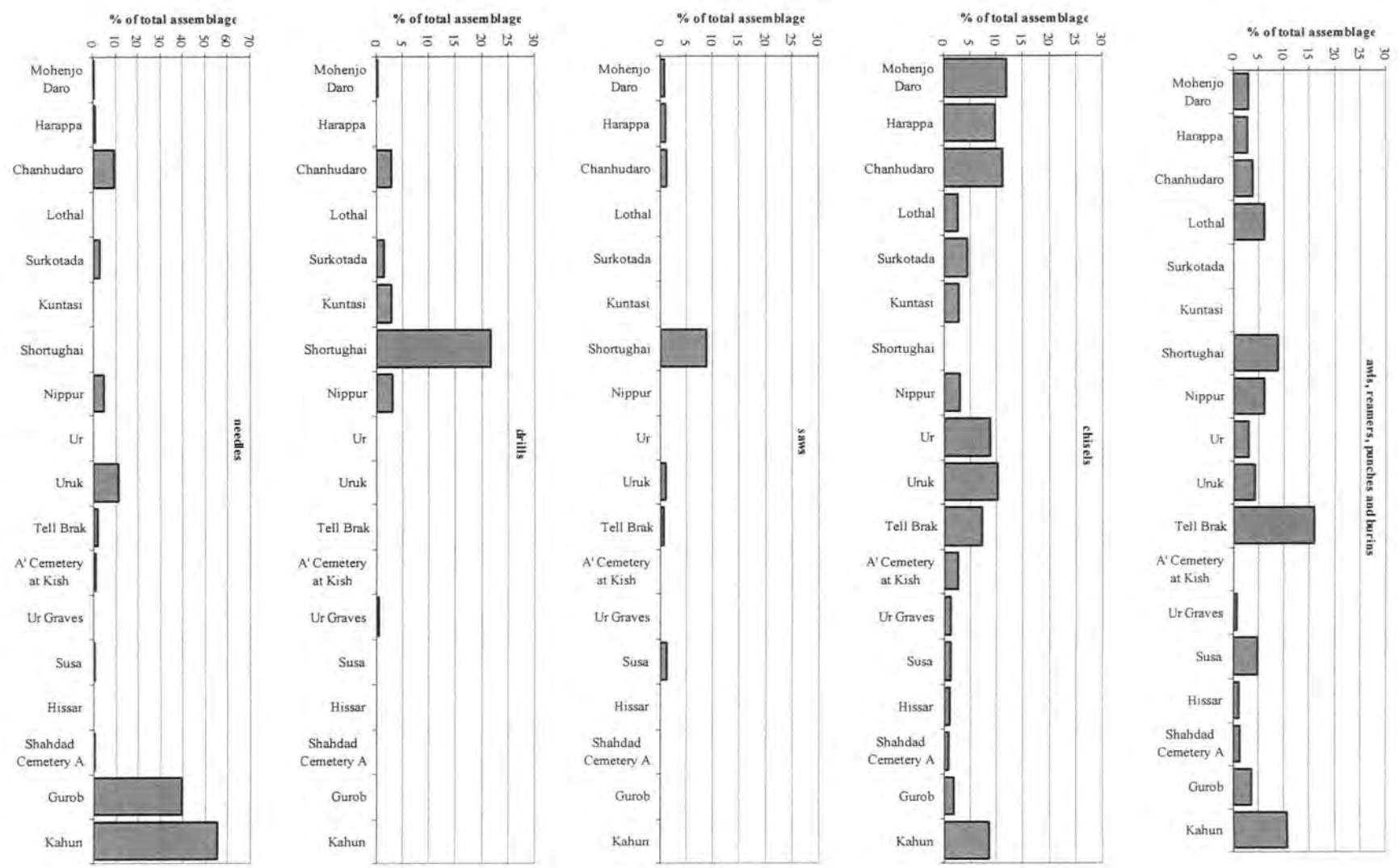
Fig. 4.5. Figurines from Mesopotamia and Iran.



No's 1, 2, 3, 5, 6, 7, 8, 9, 10, 27 From Mohenjo Daro. 4 from Harappa.

Fig. 4.6. Harappan figurines.

Fig 4.7. Distribution of different types of 'tools' at each site.



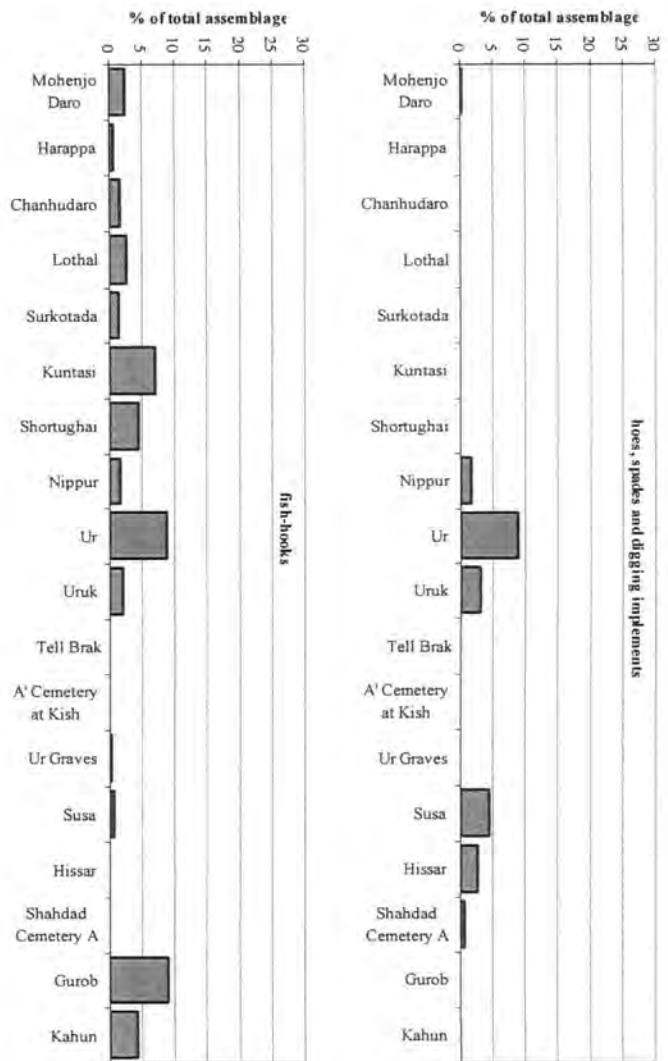


Fig. 4.7 (cont). Distribution of different types of 'tools' at each site.

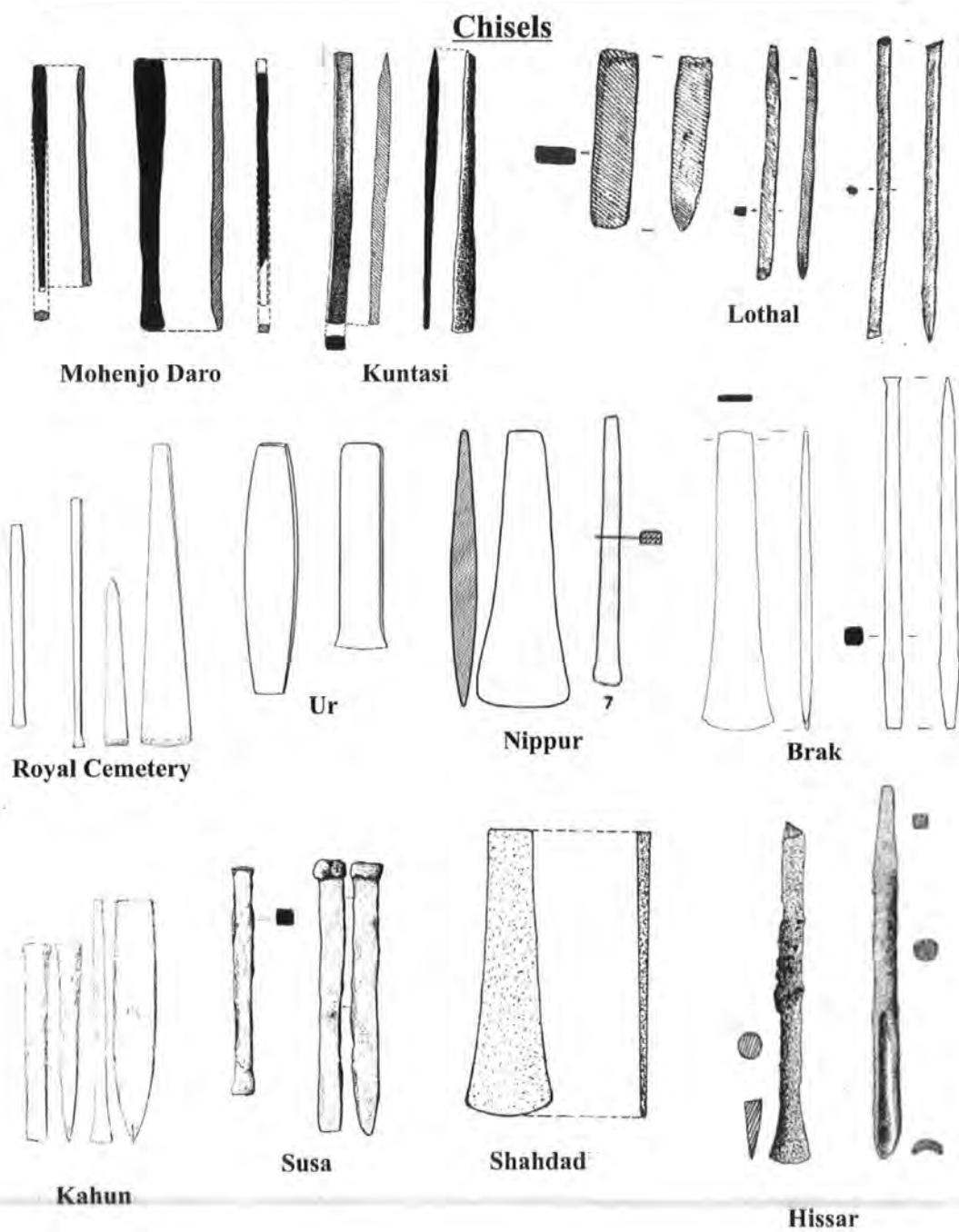
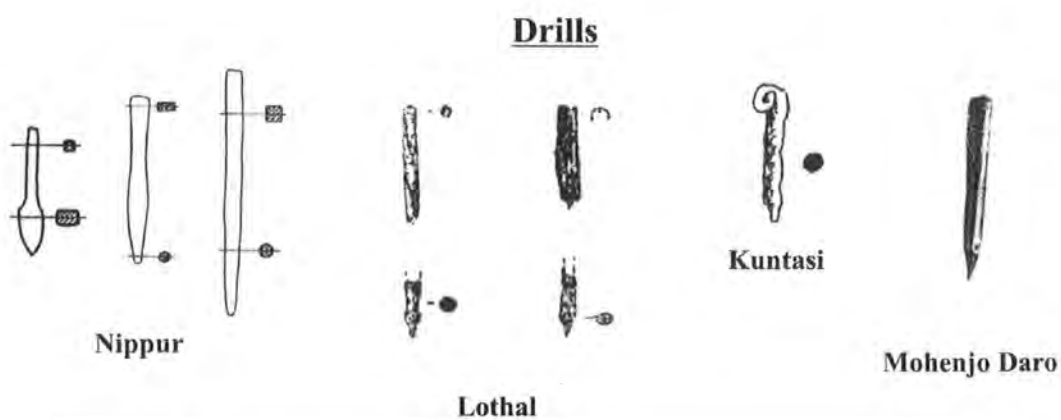
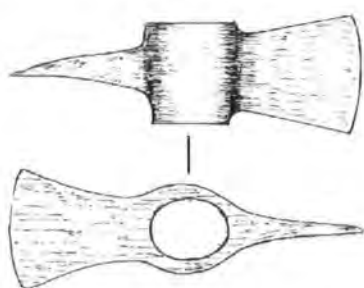


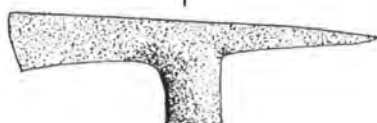
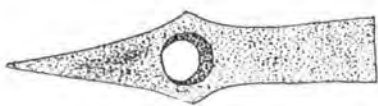
Fig. 4.8. Different types of chisel and drill.



Shahdad



Mohenho Daro



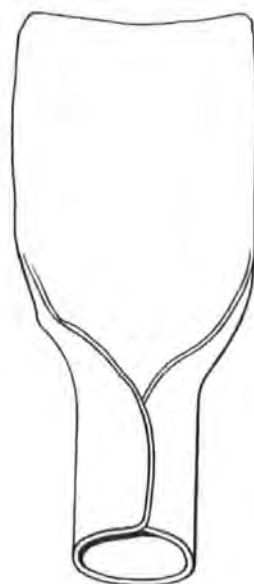
Hissar



Susa

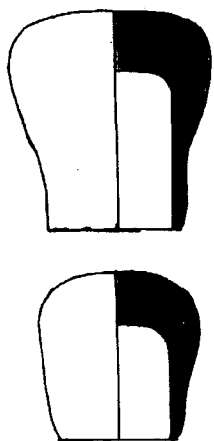


Nippur and Uruk (this example from Susa) .



Ur

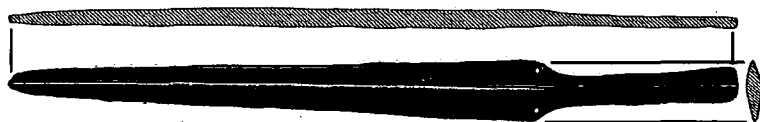
Fig. 4.9. Different types of digging tool.



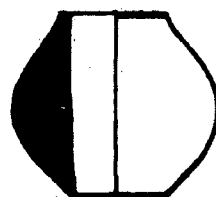
Shahdad



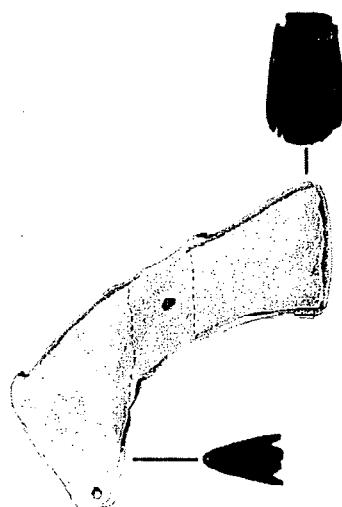
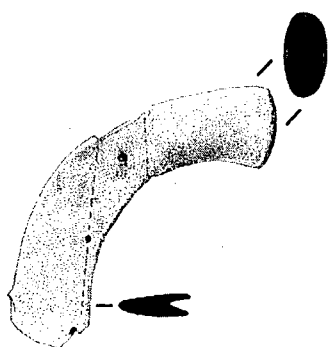
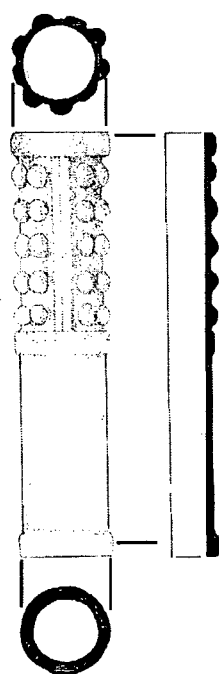
Hissar



Mohenho Daro

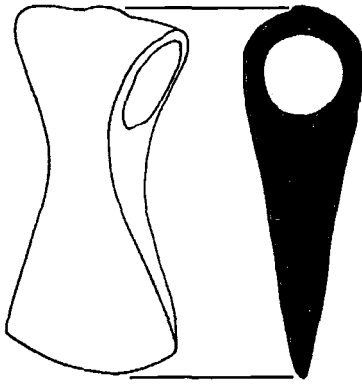


Harappa

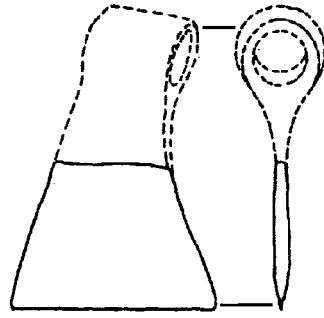


Susa

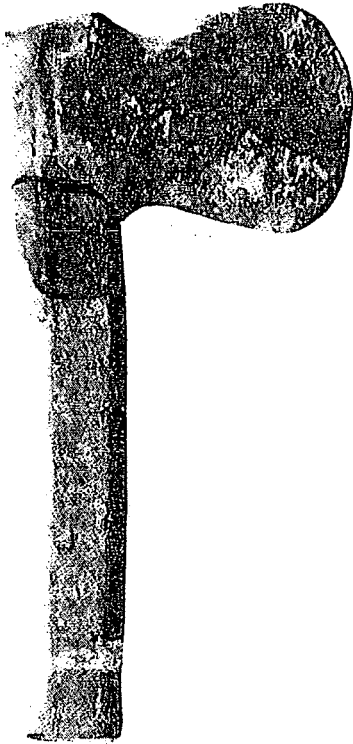
Fig. 4.10. Examples of typical 'weapons'.



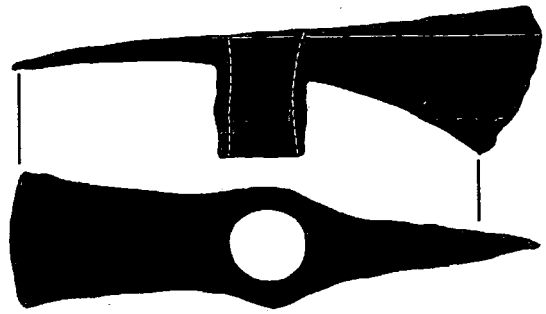
Chanhudaro- 'Jhukar' Phase



**Dubiously reconstructed socketed
axe from Harappa**



**Terracotta socketed axe
model from Mohenjo Daro**

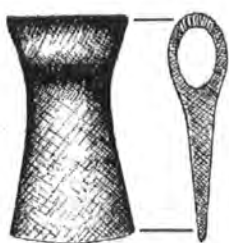


**Socketed axe/ adze from Mohenjo Daro-
(not part of the 'tool/weapon' category)**

Fig. 4.11. Harappan socketed axes.



Shahdad



Hissar



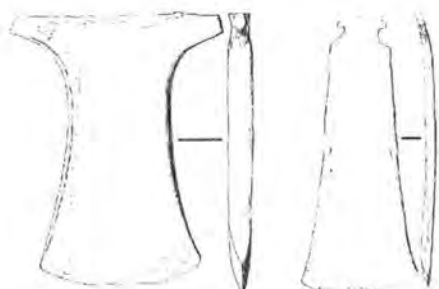
Susa



Mohenjo Daro
(typical of Indus sites)



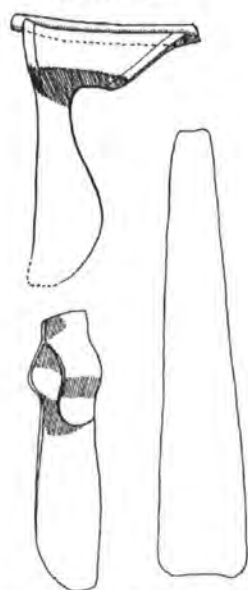
Tell Brak



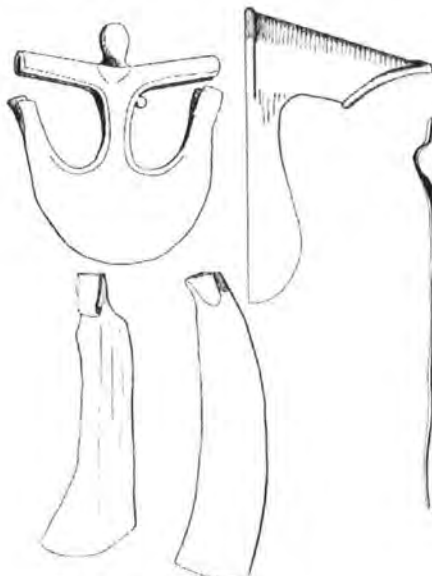
Gurob



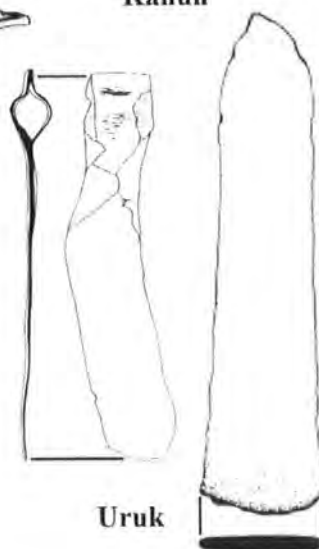
Kahun



'A' Cemetery, Kish



Ur Royal Cem



Uruk

Fig. 4.12. Most common types of axe at each site.

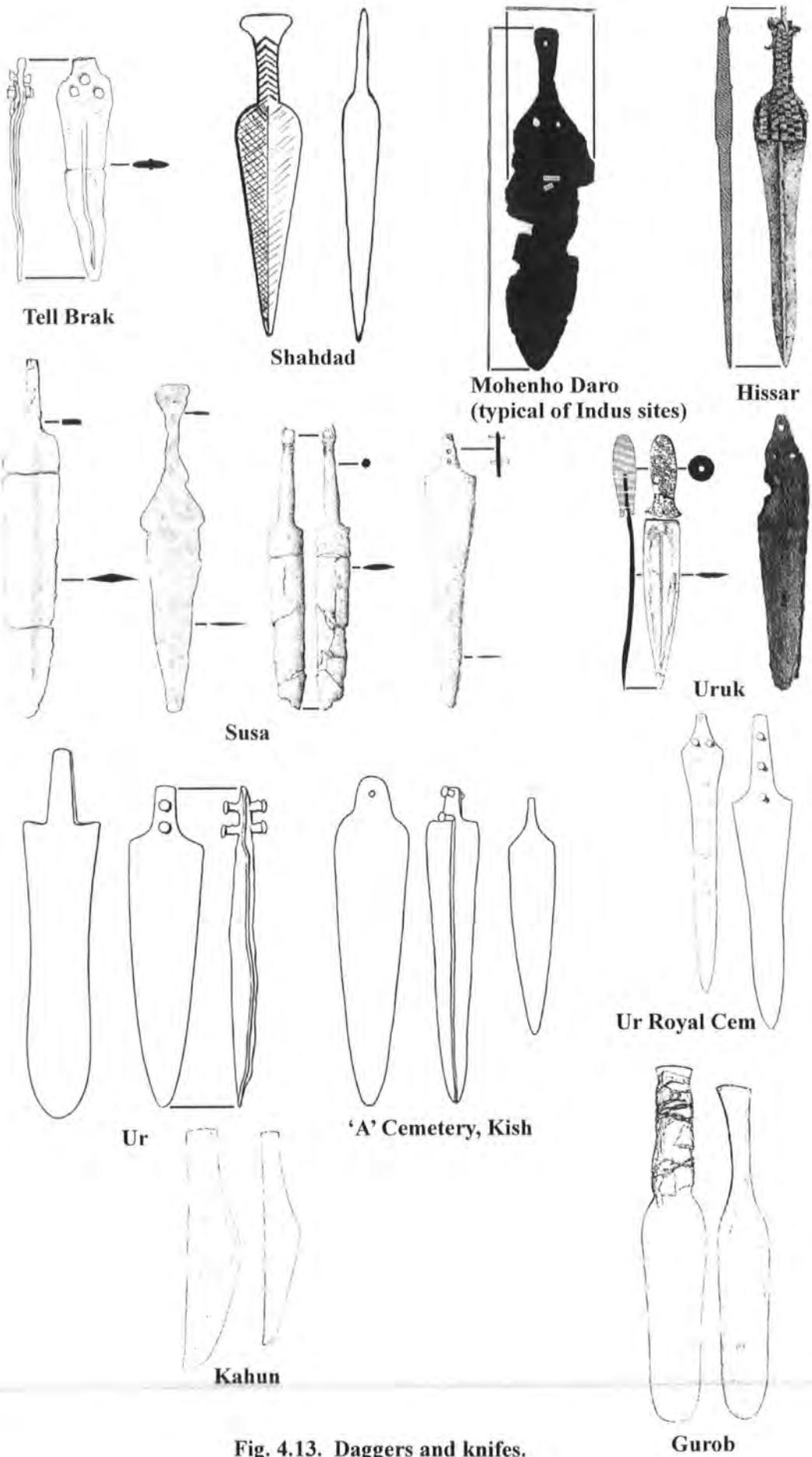


Fig. 4.13. Daggers and knives.

Arrows

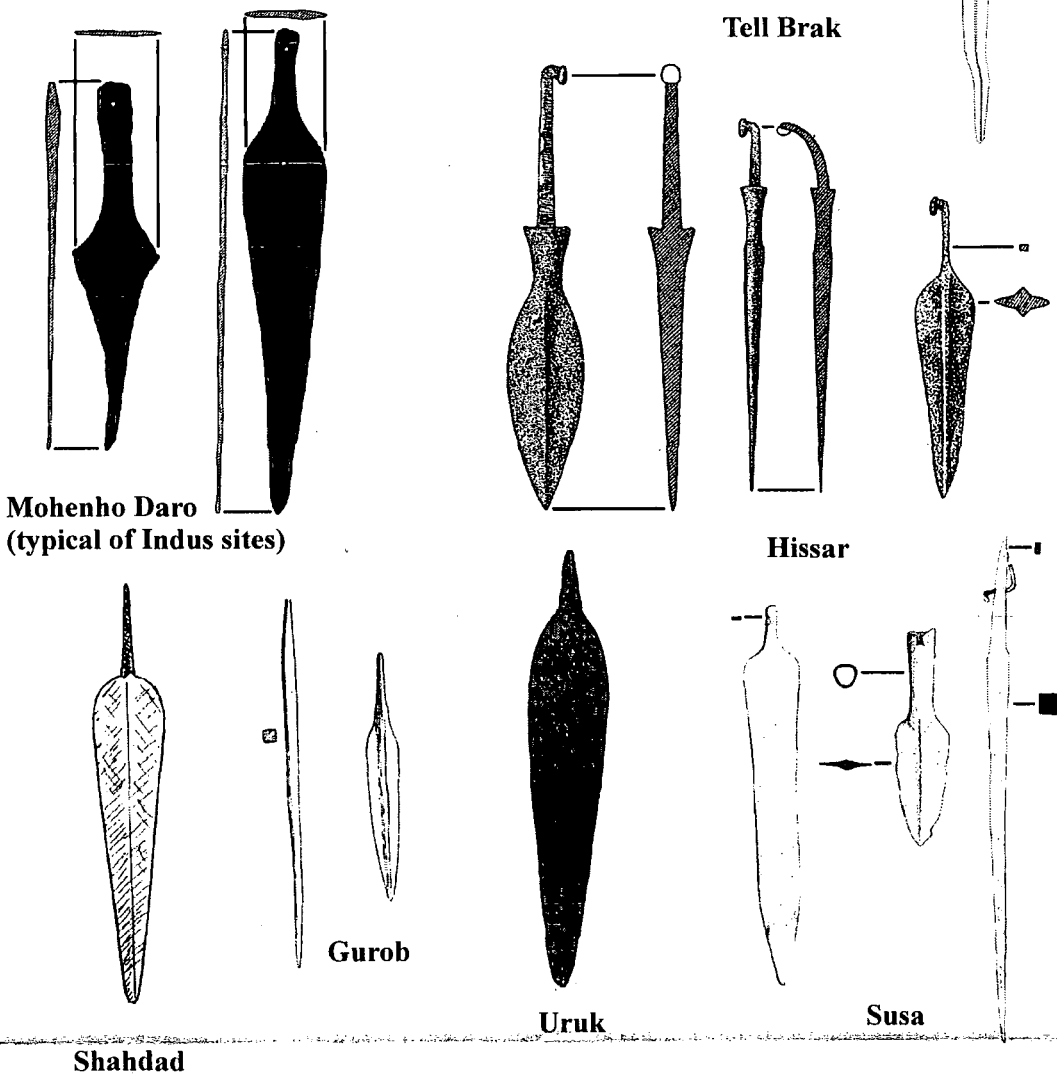
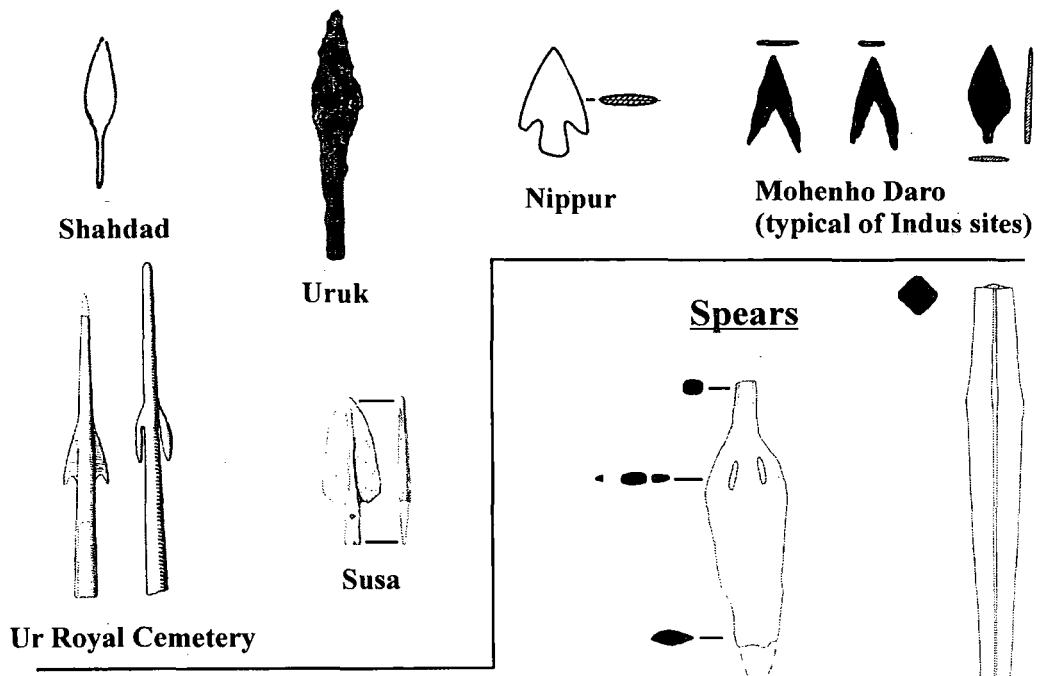


Fig. 4.14. Spears and arrows.

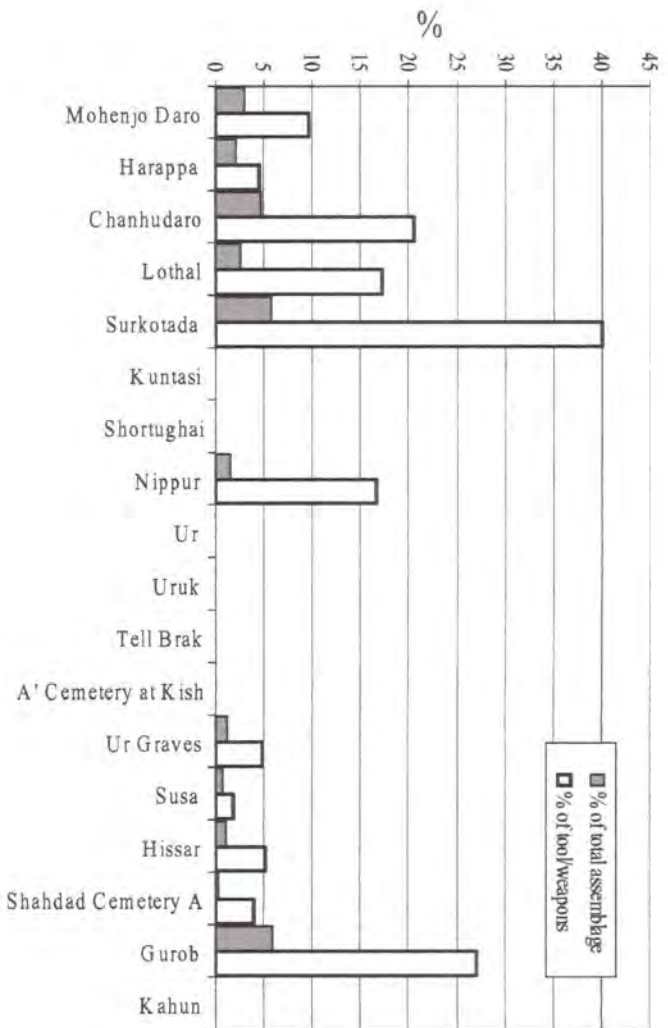


Fig 4.15. The popularity of arrows at Indus sites.

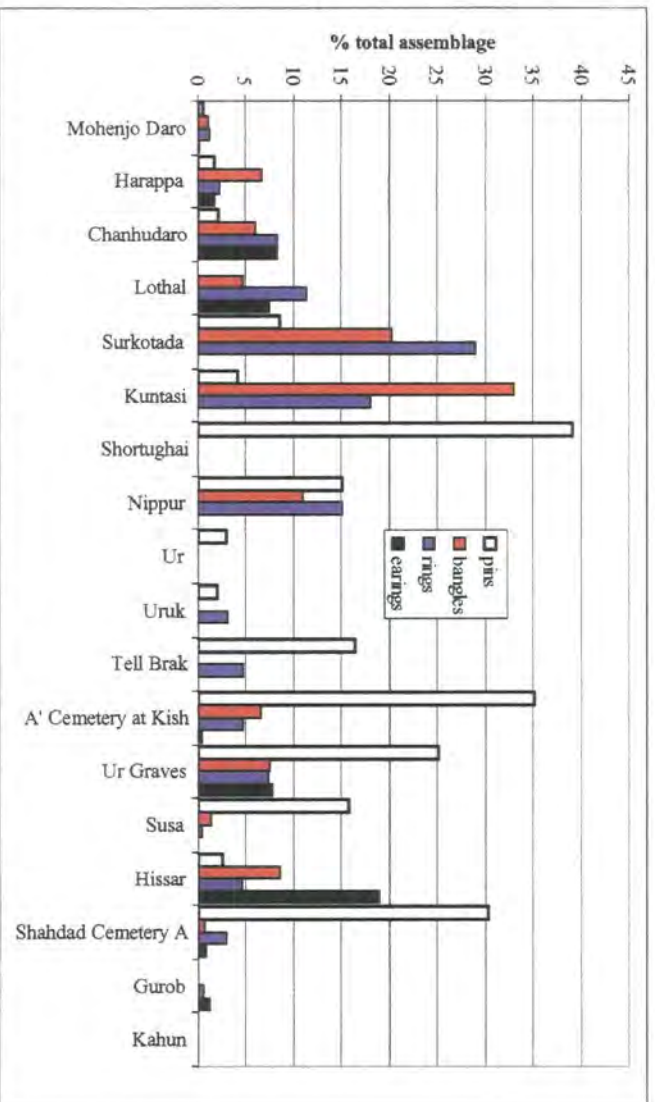
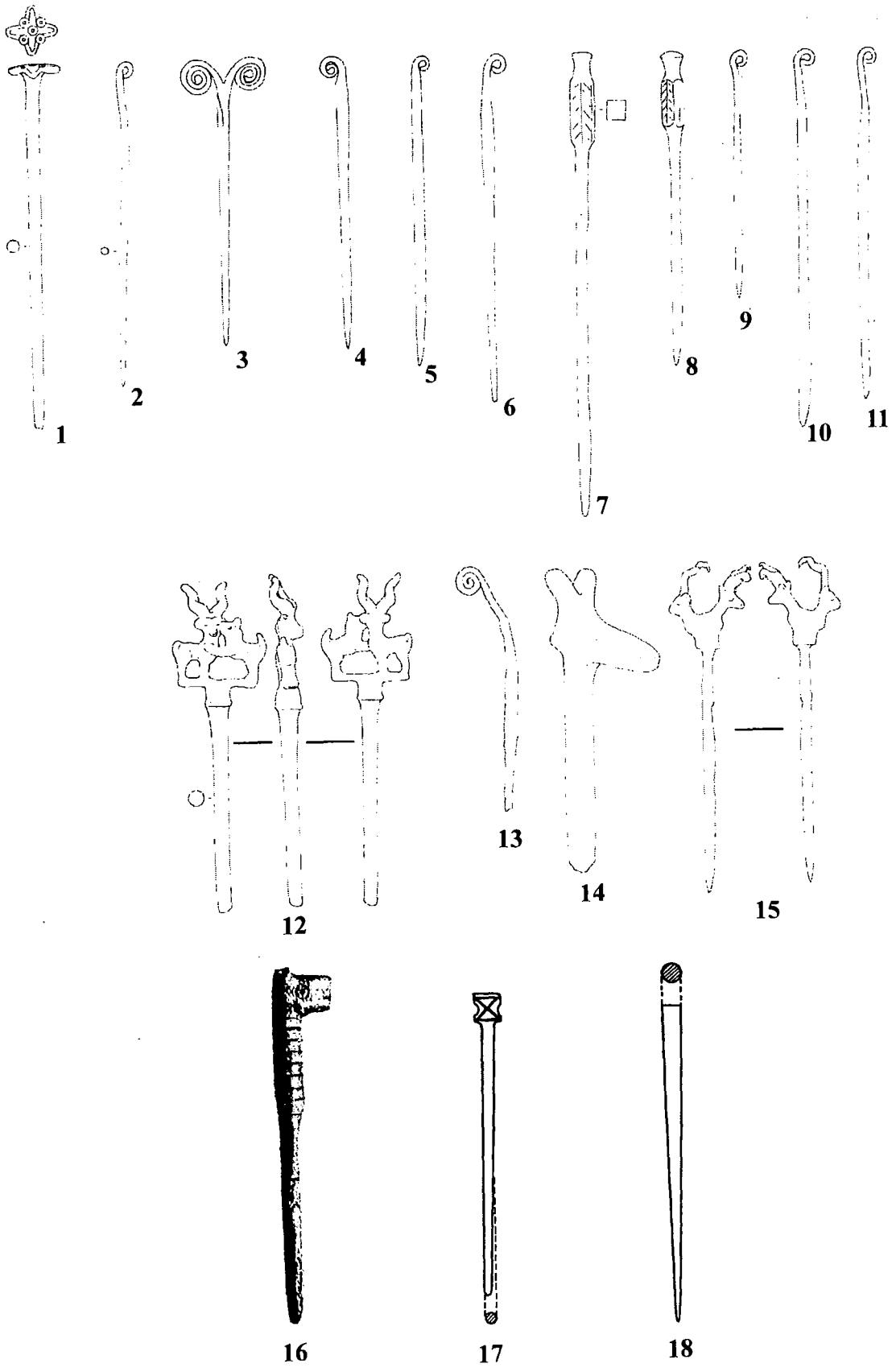


Fig. 4.16. Distribution of different types of 'personal adornment' at each site.



No's 13-15 From Mohenjo Daro; 1-11 Chanhudaro; 12 Harappa.
16 (steatite), 17 and 18 (ivory) from Mohenjo Daro

Fig. 4.17. Harappan pins.

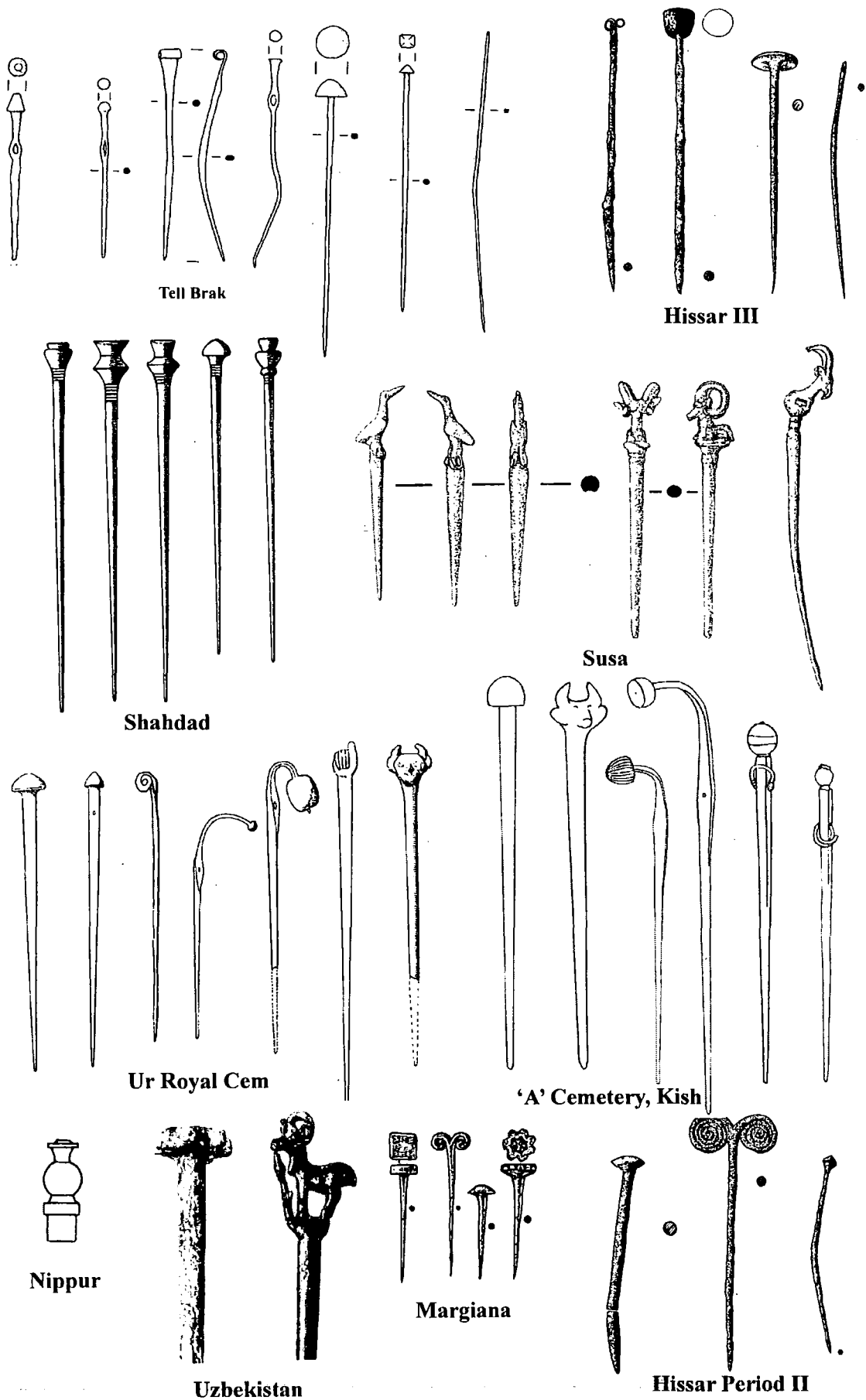
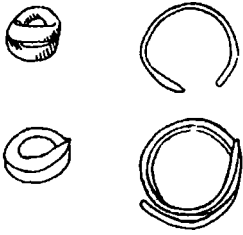


Fig. 4.18. Pins from Mesopotamia, Iran and Central Asia.

Earrings



Kish

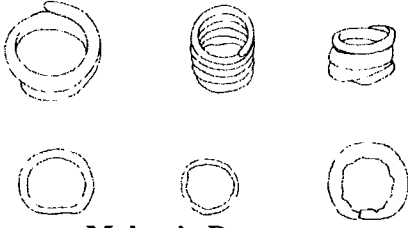


Harappa

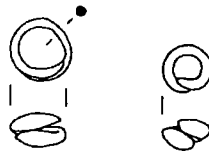


Lothal ear 'ornaments'

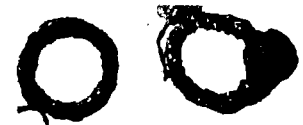
Rings



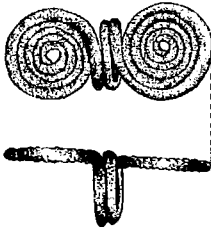
Mohenjo Daro
(typical of Indus)



Tell Brak



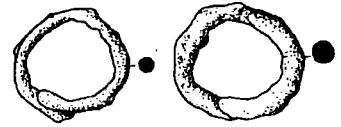
Uruk



Kuntasi

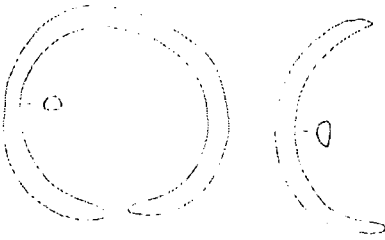


Hissar

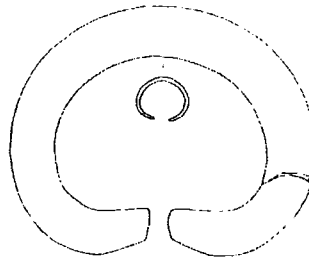


Susa

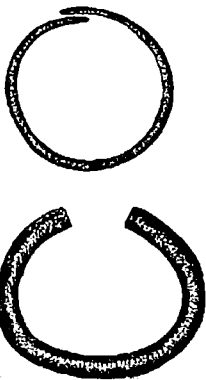
Bangles



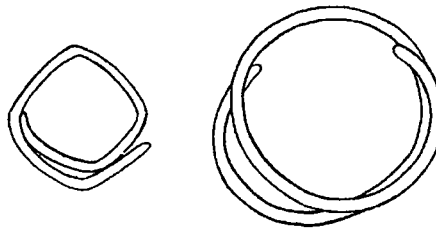
Typical Indus types



Lothal



Shahdad



Kish



Hissar

Fig. 4.19. Bangles and rings.

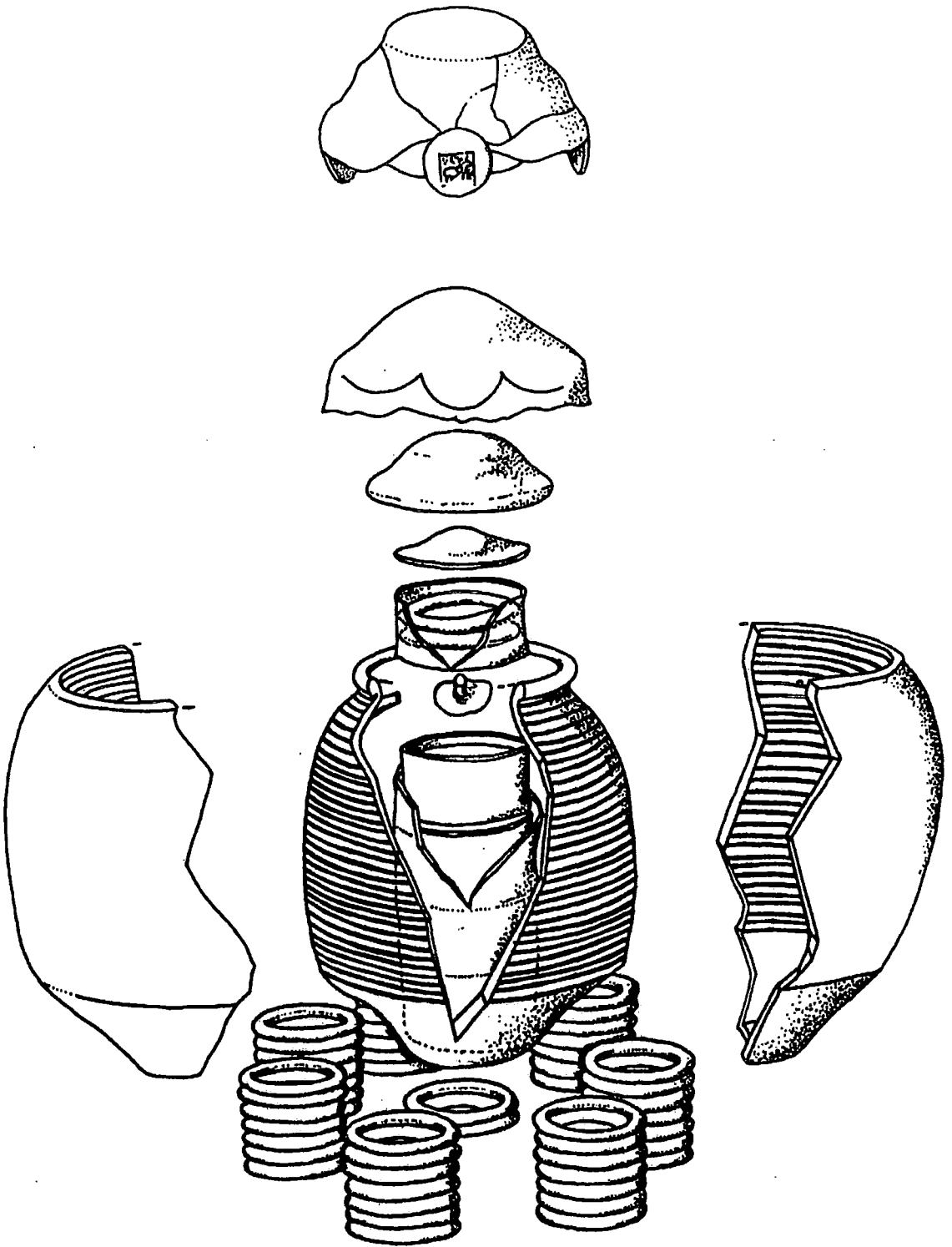
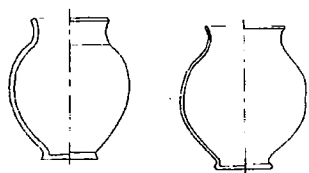
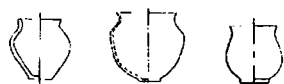


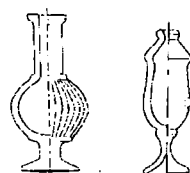
Fig. 4.20. Controlled manufacture of stoneware bangles. From Halim and Vidale (1984).



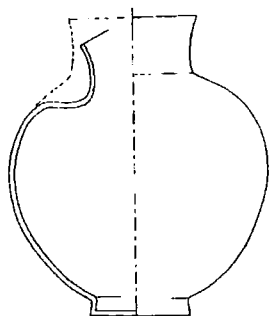
1. Goblets



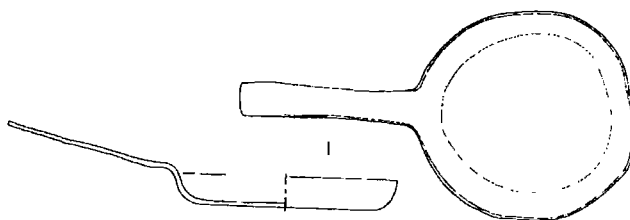
2. Miniature jars and goblets



3. Containers?



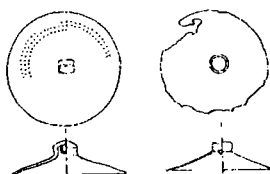
4. Globular jar



5. Handled pans



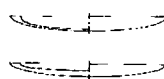
6. Round-bottomed bowl



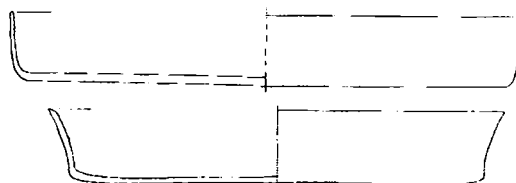
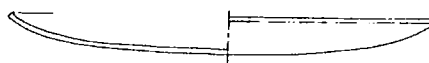
7. Lids



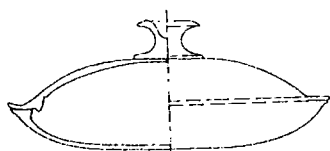
8. Scale pans



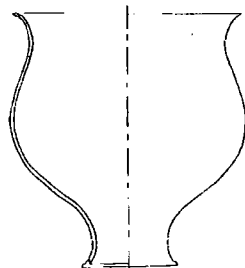
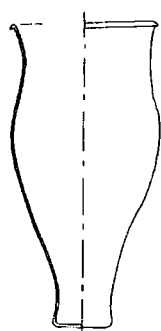
9. Small dishes



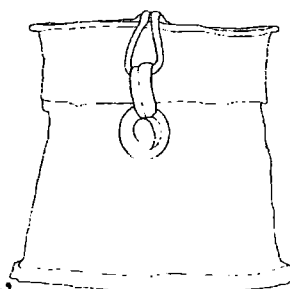
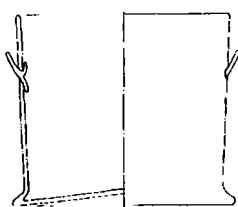
11. Larger dishes and pans



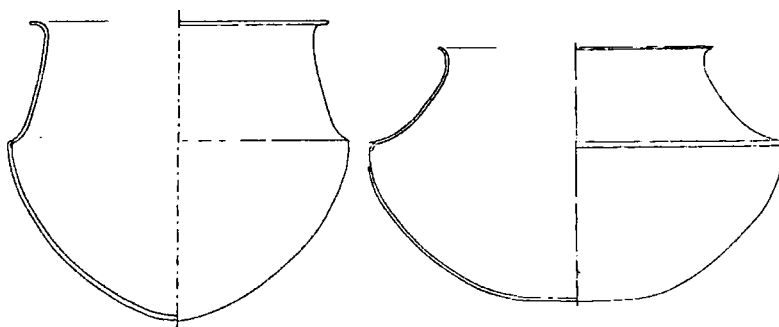
10. Large dish and handled lid



13. Vases

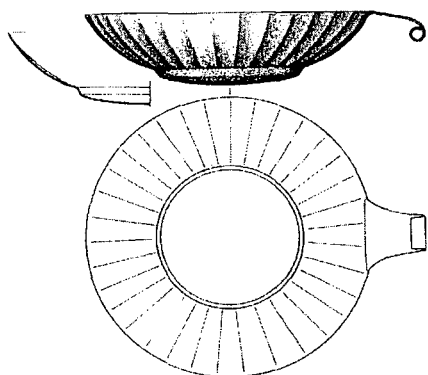


12. 'Buckets'

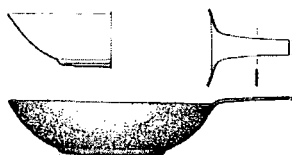


14. Carinated vessels

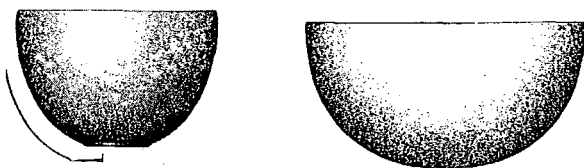
Fig. 4.21. Harappan 'vessels'.



1. Ribbed handled
pan/ drinking vessel

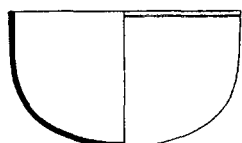


2. Handled pan



3. Flat- and round-bottomed bowls

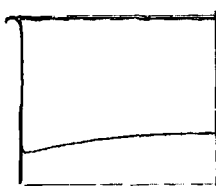
Kish



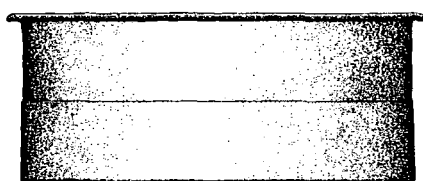
4. Round-bottomed bowl



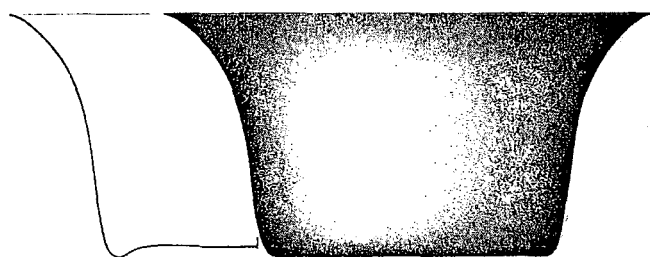
5. Spouted vase
Uruk



6. False-bottomed basins



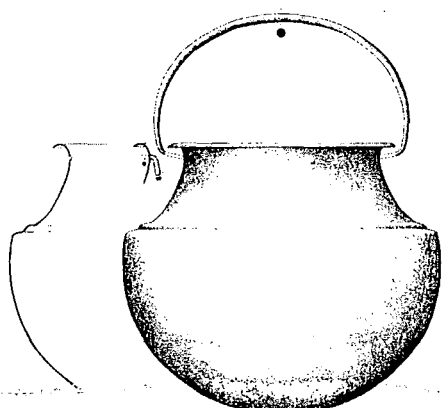
7. Vases



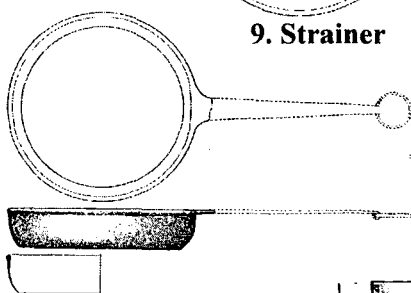
8. Cauldron



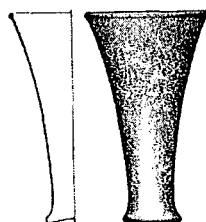
9. Strainer



10. Handled vessel



11. Handled pan



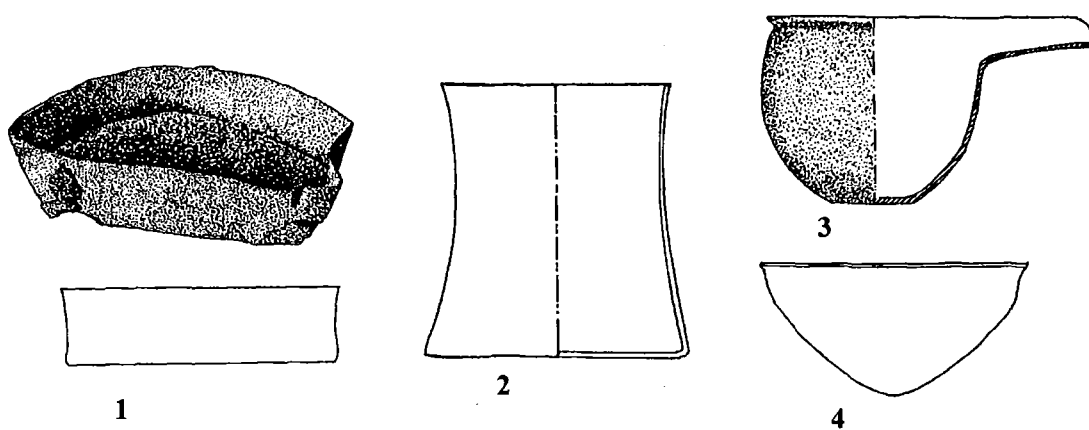
12. Beaker



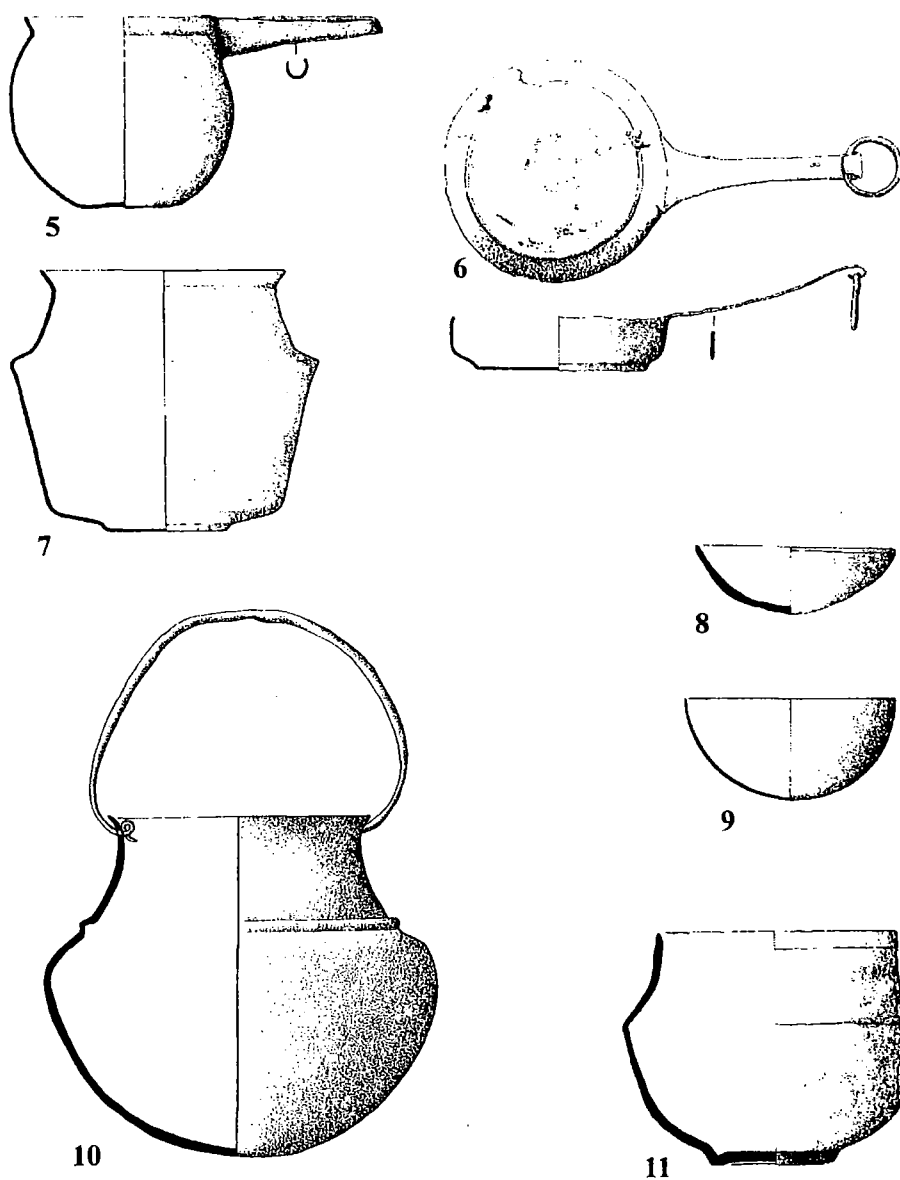
13. Round-bottomed bowl

Ur

Fig. 4.22. Mesopotamian 'vessels'.

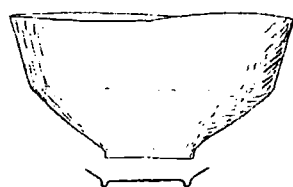


Hissar



Susa

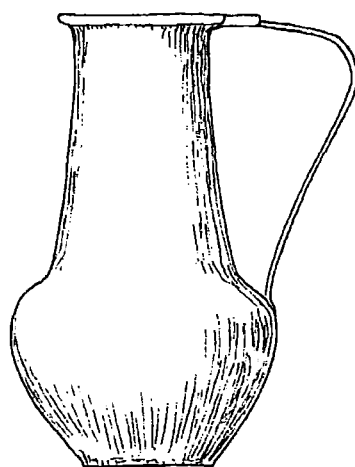
Fig. 4.23. 'Vessels' from Hissar and Susa.



1: Kahun- bowl



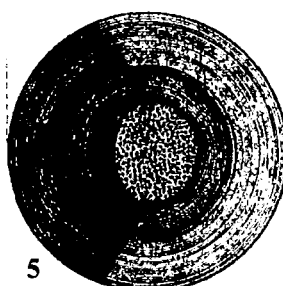
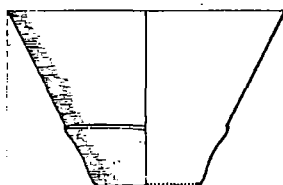
2: Gurob- bowl



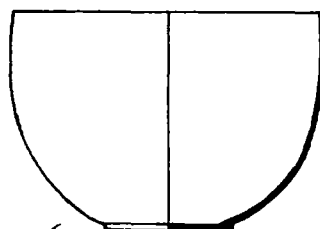
3: Gurob- jug



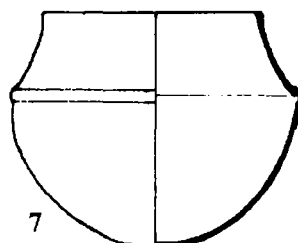
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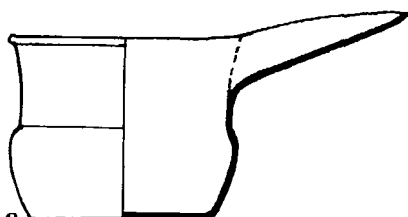
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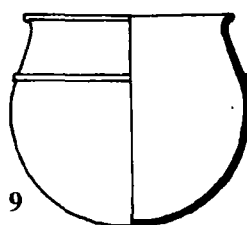
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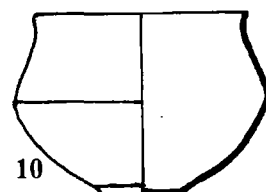
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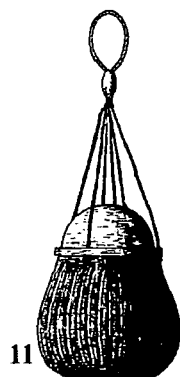
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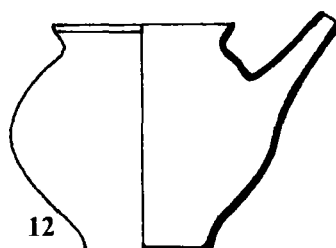
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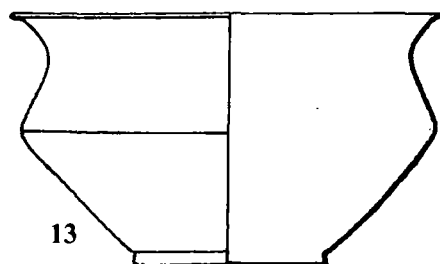
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11



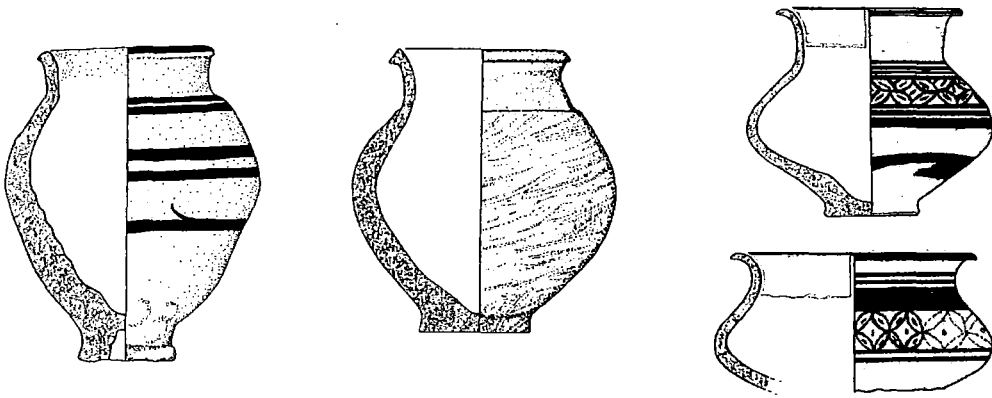
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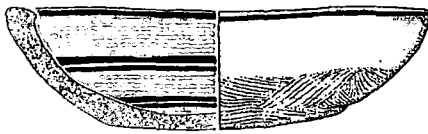
13

Shahdad

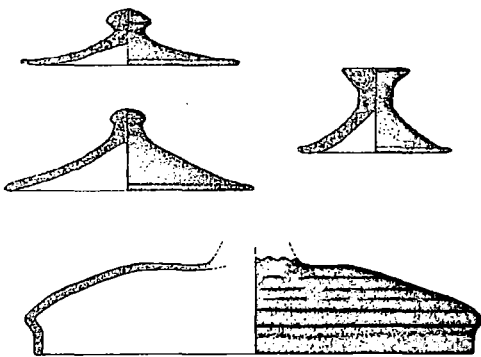
Fig. 4.24. 'Vessels' from Shahdad and Egypt.



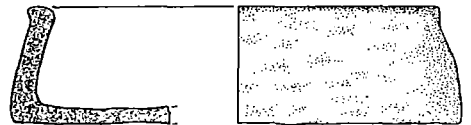
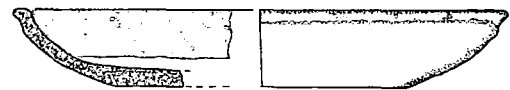
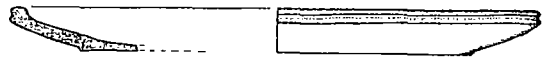
Jars and goblets



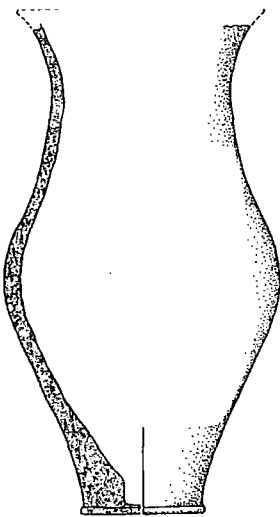
Round-bottomed bowl



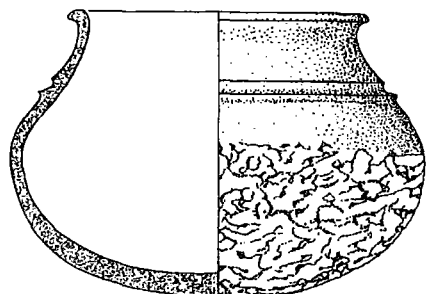
Lids



Dishes and pans



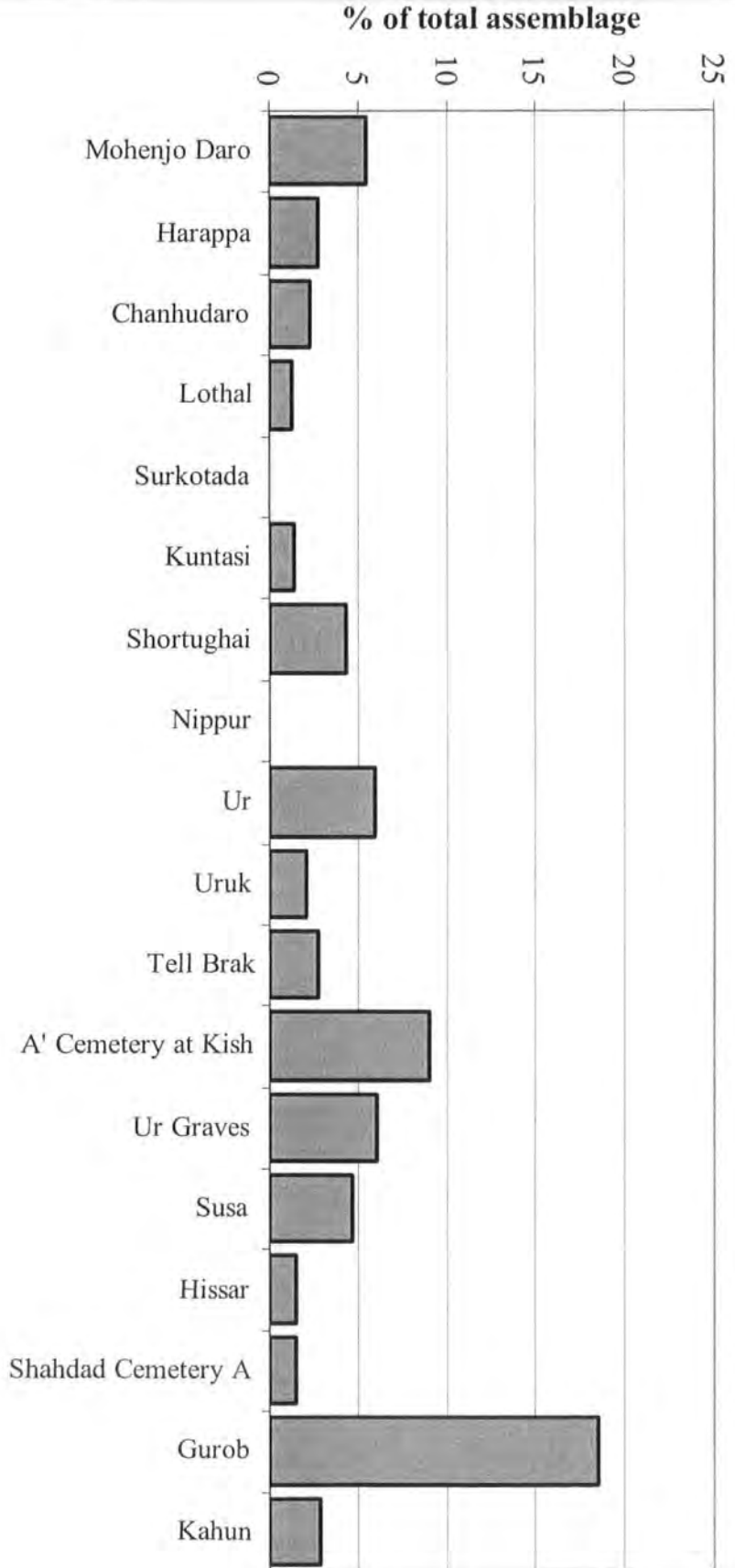
Vase



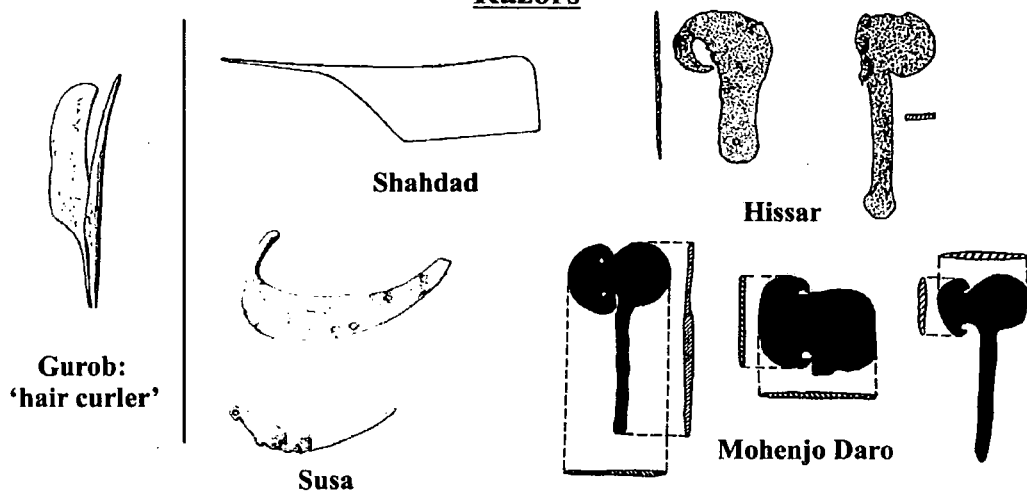
Carinated vessel

Fig. 4.25. Ceramic analogues of metal 'vessels' from the Indus.

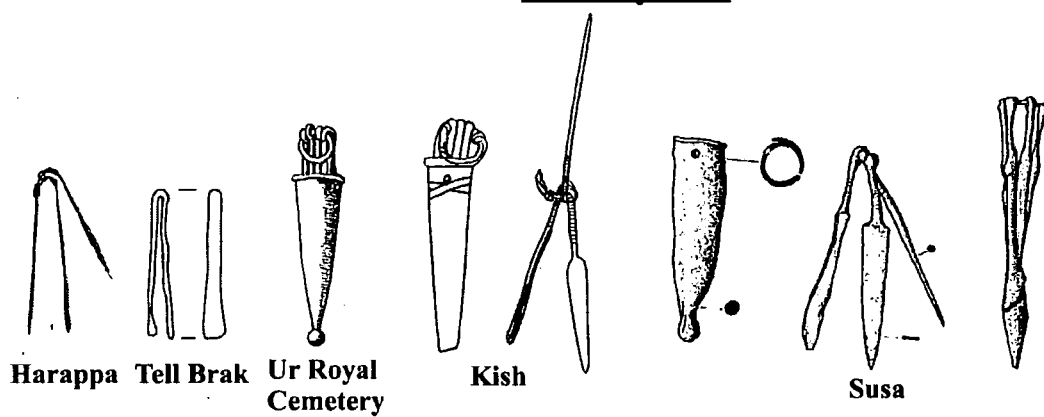
Fig. 4.26. Proportion of overall assemblage composed of 'toiletty' at each site.



Razors



'Toiletry sets'



Mirrors

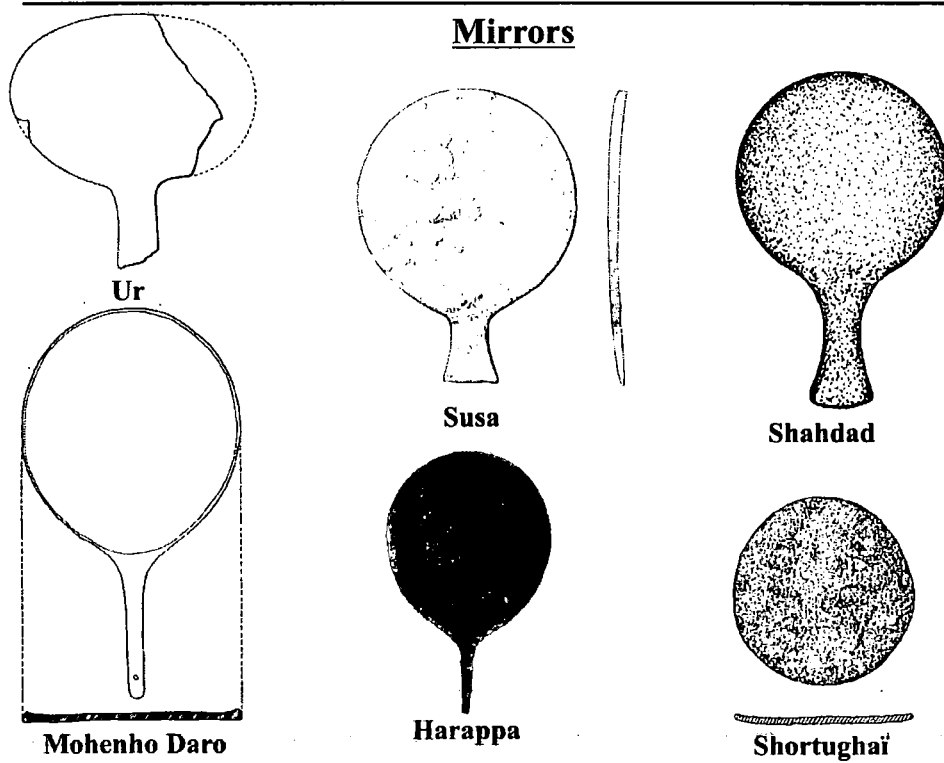
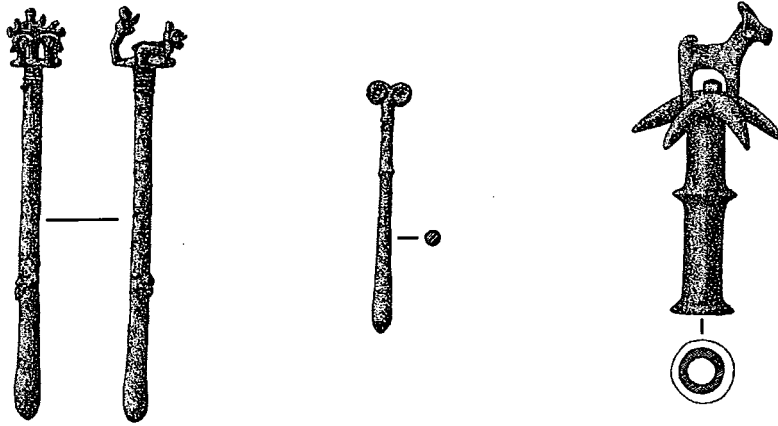


Fig. 4.27. Examples of 'toiletry' items.



Hissar- 'wands'



Mohenjo Daro tablets.

Fig. 4.28. Miscellaneous objects.

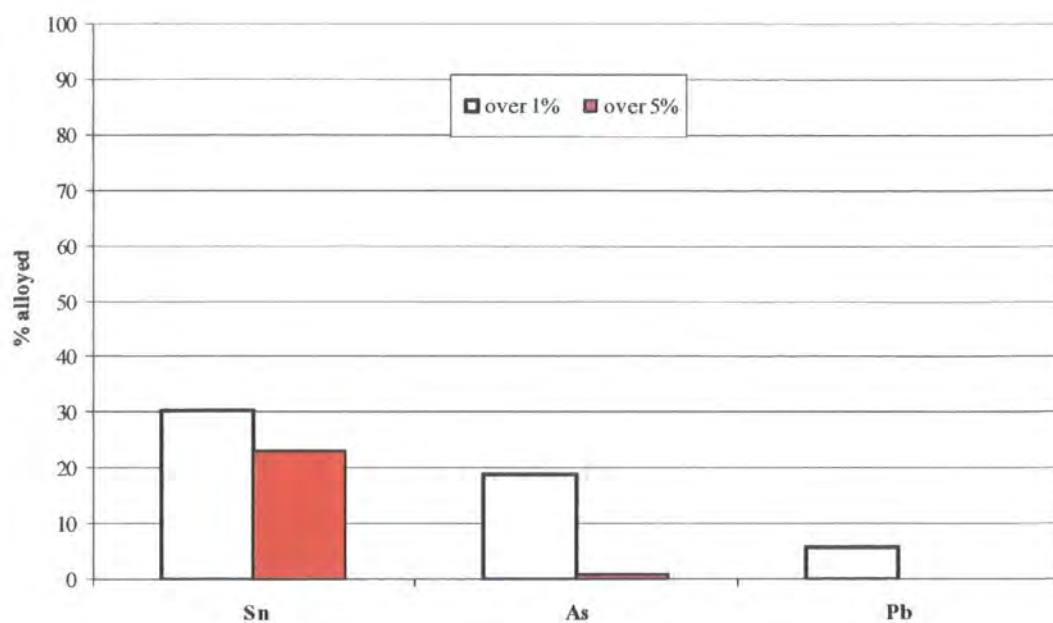


Fig. 4.29. Alloying levels in Indus metalwork (all sites).

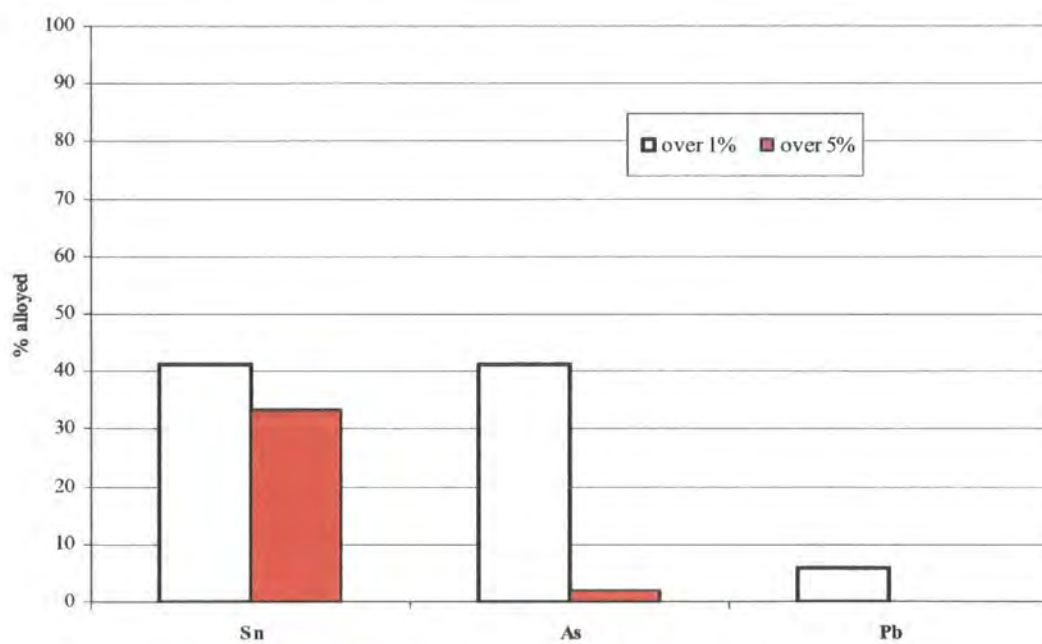


Fig. 4.30. Alloying levels in Indus metalwork (sites in the Greater Indus Valley).

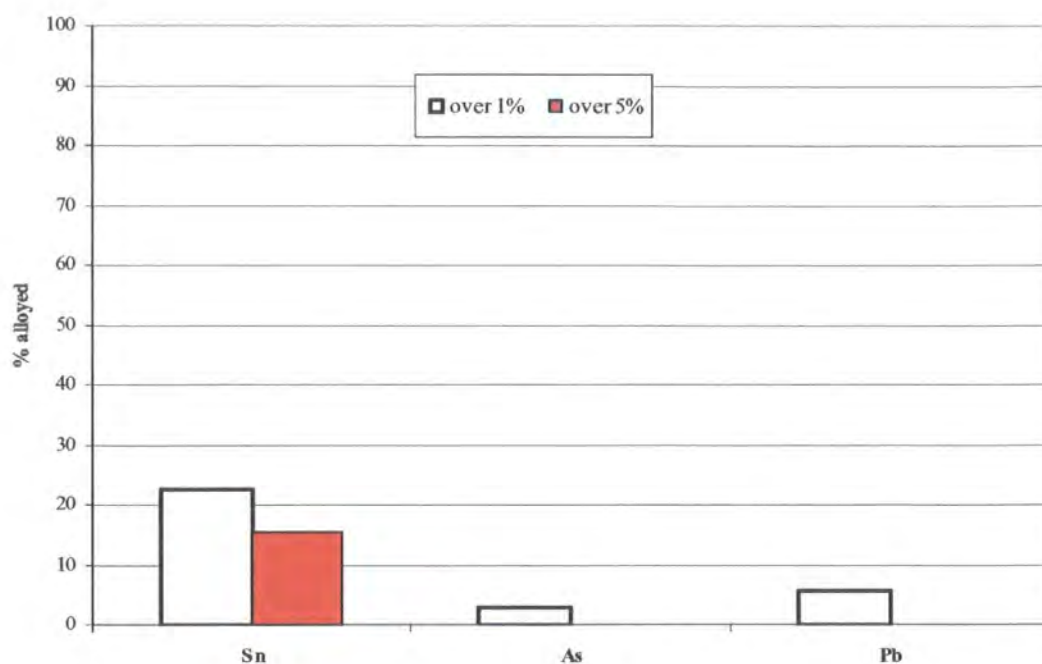


Fig. 4.31. Alloying levels in Indus metalwork (sites in the Greater Indus Valley).

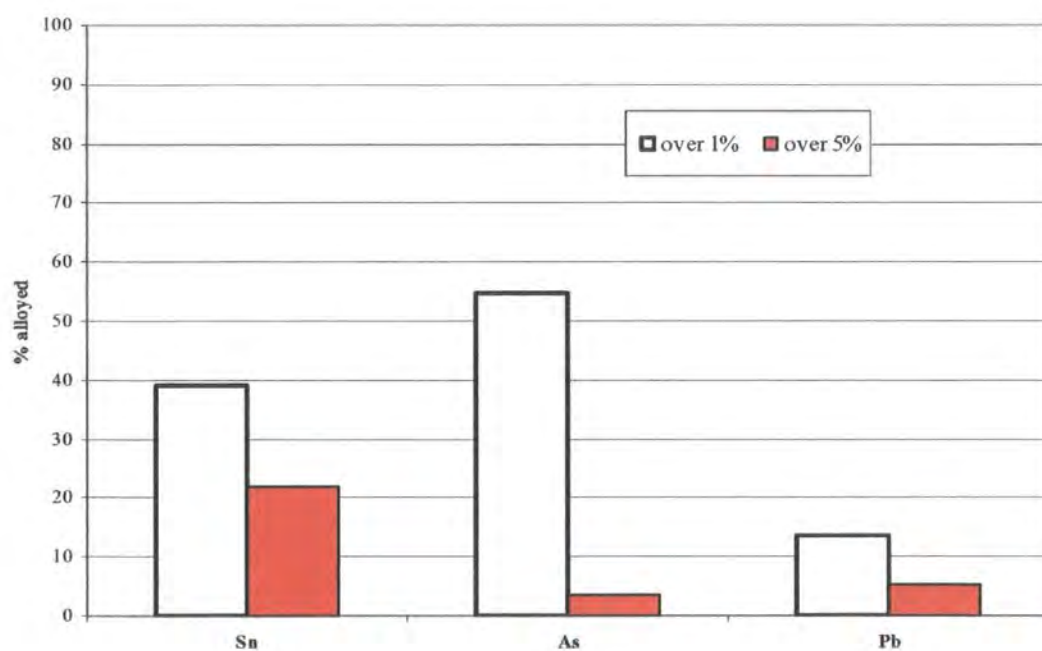


Fig. 4.32. Alloying levels in Mesopotamian metalwork (Tell Brak, Uruk, Khafajah, Kish 'A' Mound, Kish 'A' Cemetery, Ur Royal Cemetery).

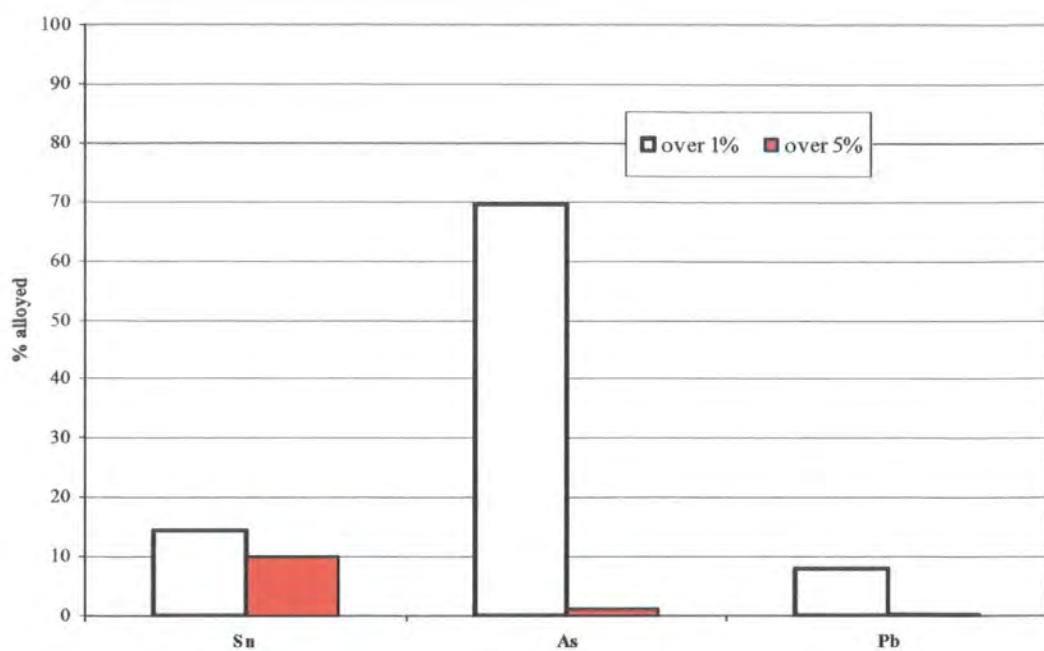


Fig. 4.33. Alloying levels in Iranian metalwork (Susa).

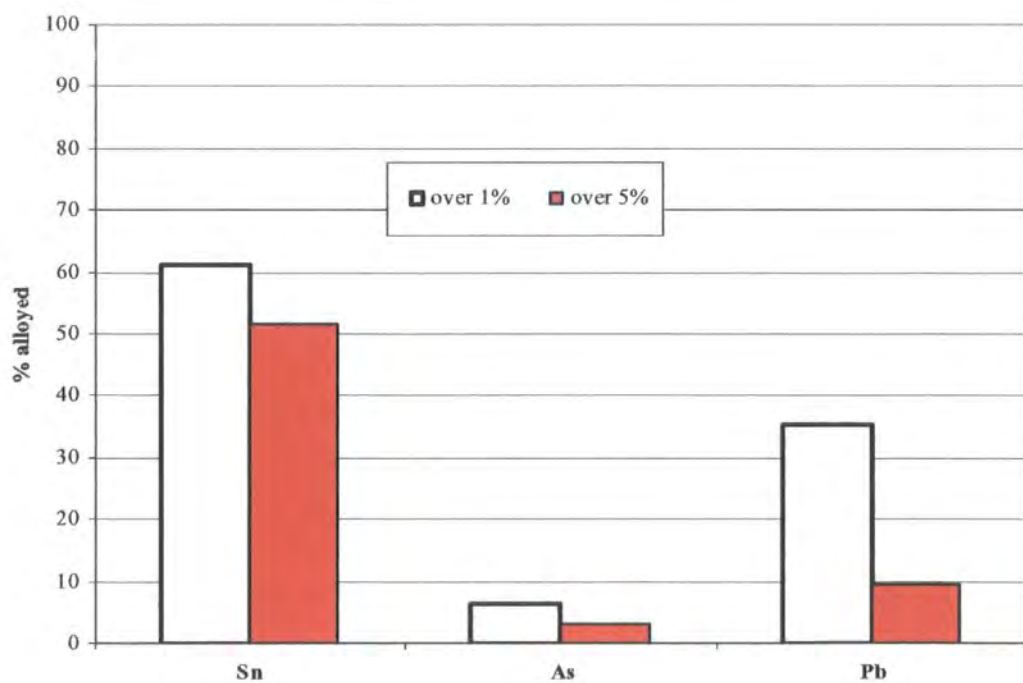


Fig. 4.34. Alloying levels in Persian Gulf metalwork (Tell Abraq).

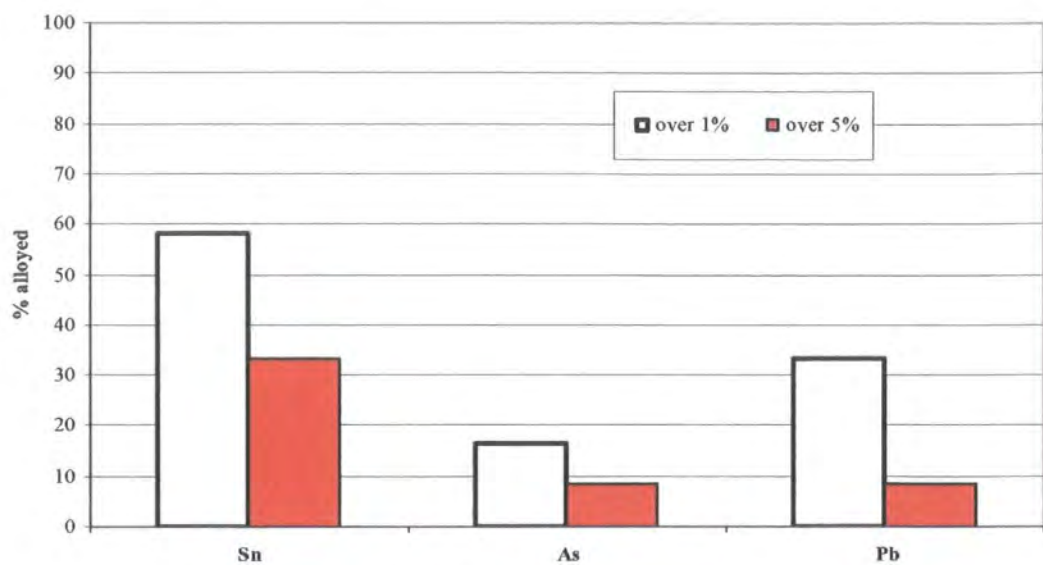


Fig. 4.35. Alloying levels in Persian Gulf metalwork from settlement contexts.

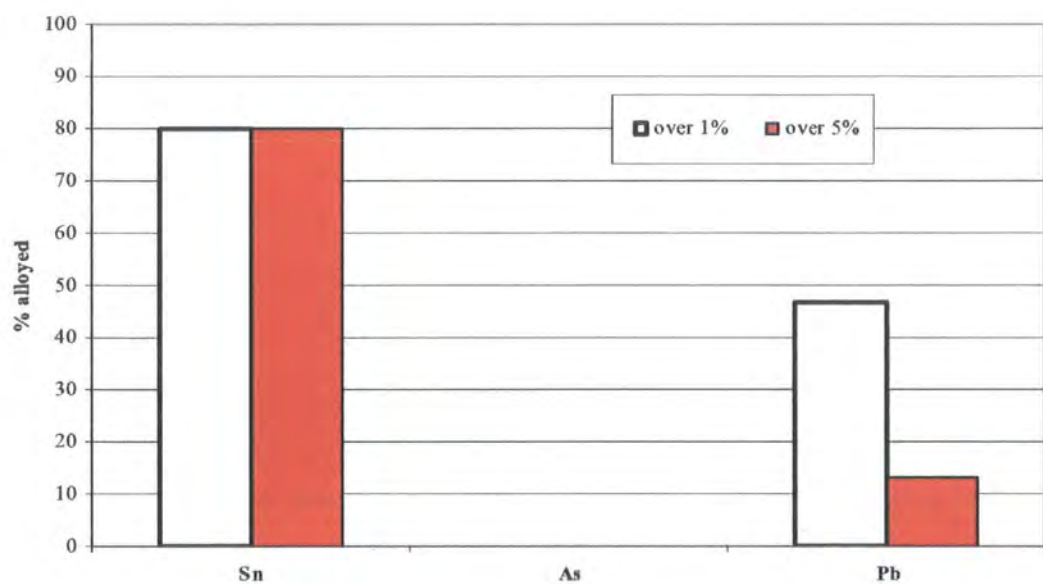


Fig. 4.36. Alloying levels in Persian Gulf metalwork from funerary contexts.

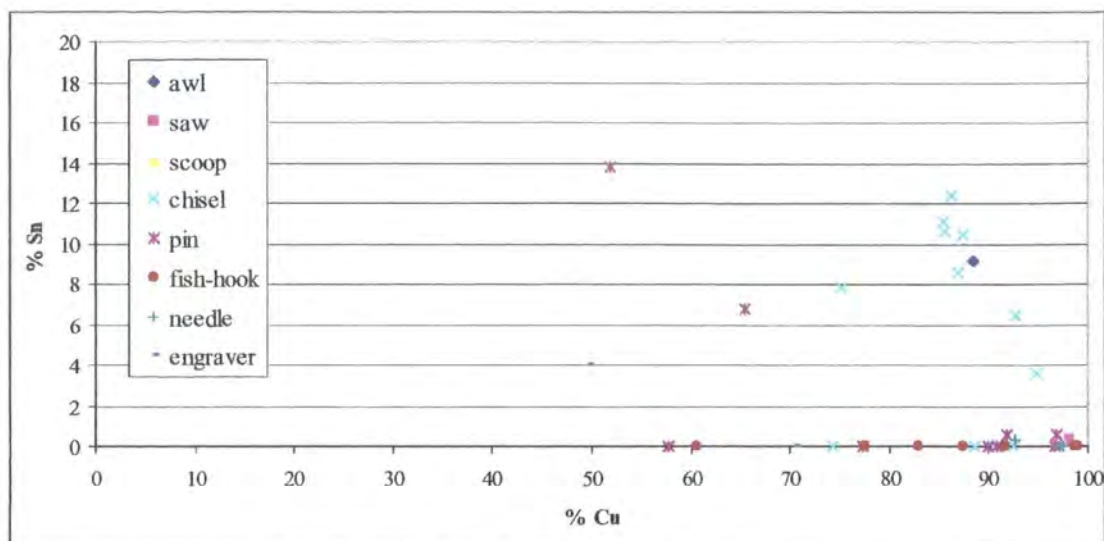


Fig. 4.37. Levels of tin in Indus tools.

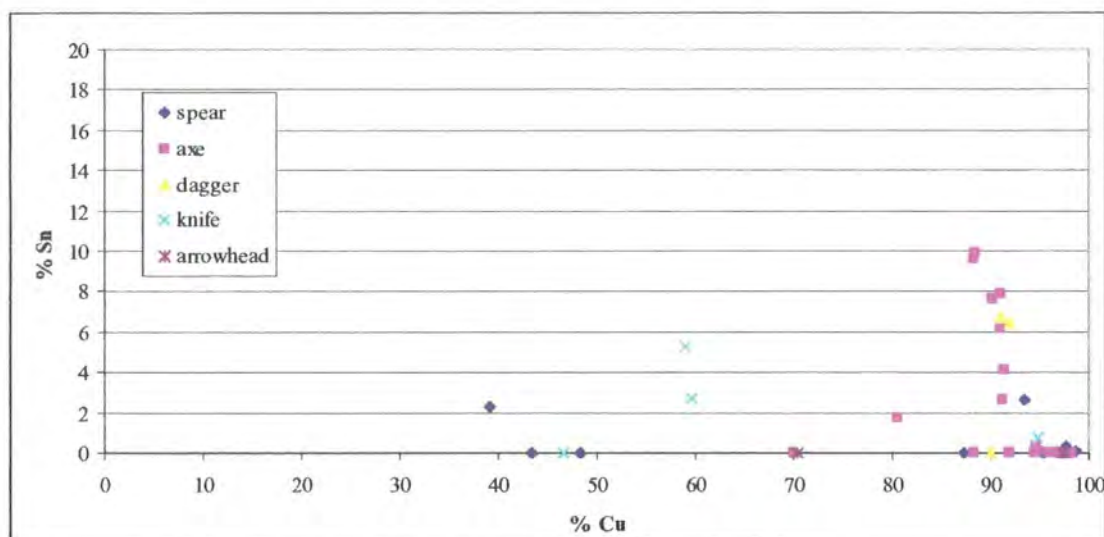


Fig. 4.38. Levels of tin in Indus weapons.

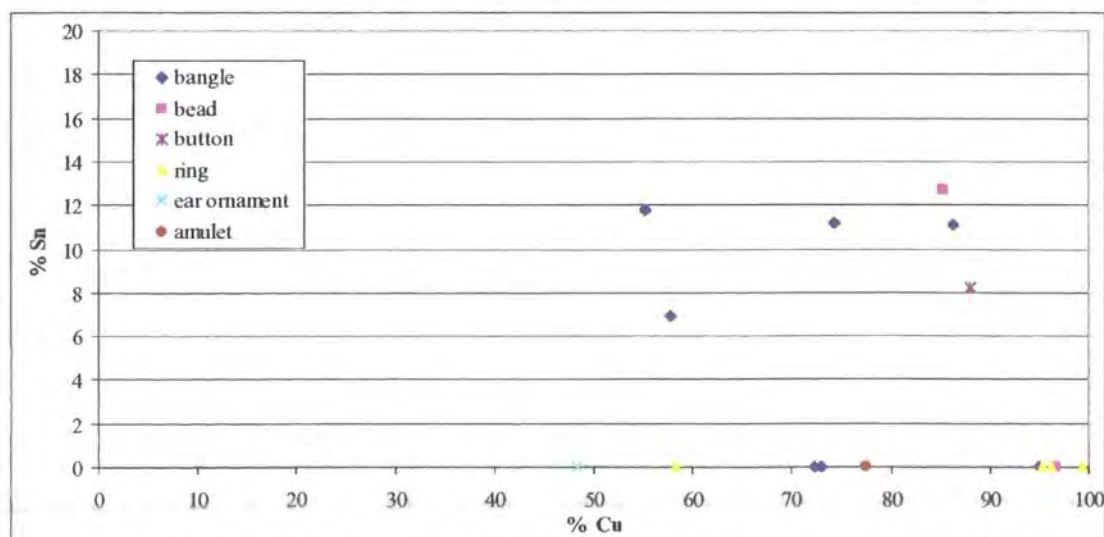


Fig. 4.39. Levels of tin in Indus personal adornment.

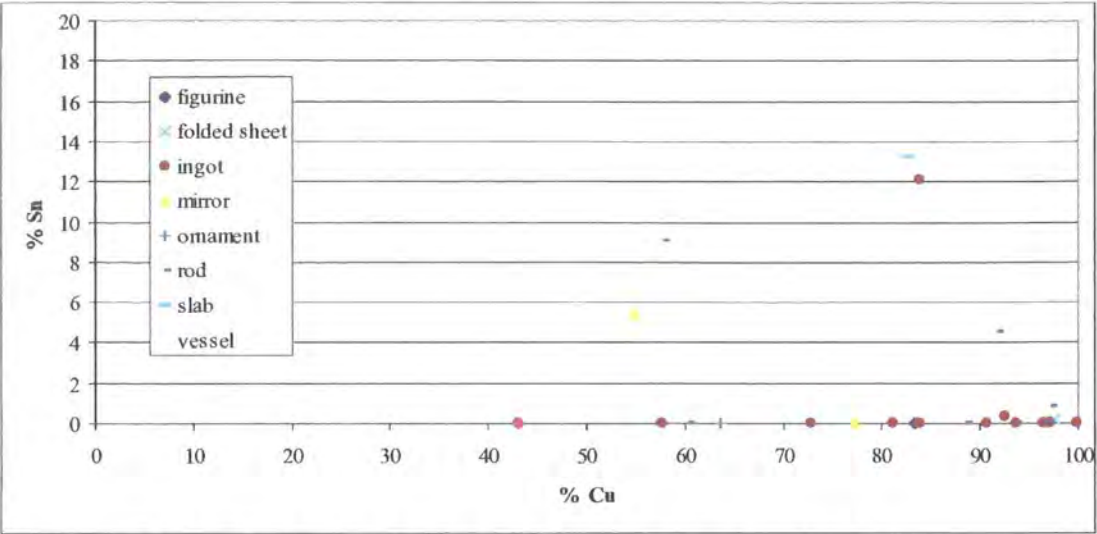


Fig. 4.40. Levels of tin in miscellaneous Indus metalwork.

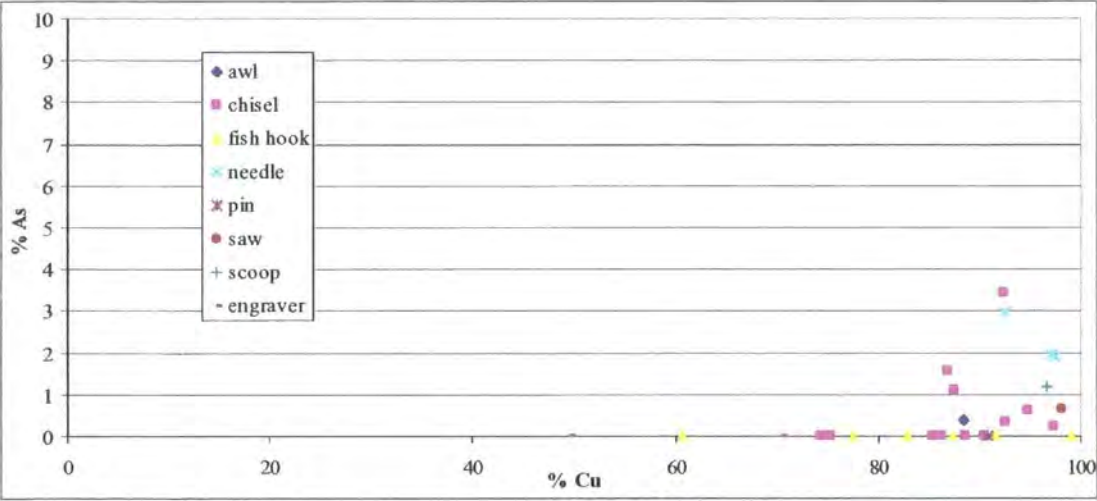


Fig. 4.41. Levels of arsenic in Indus tools.

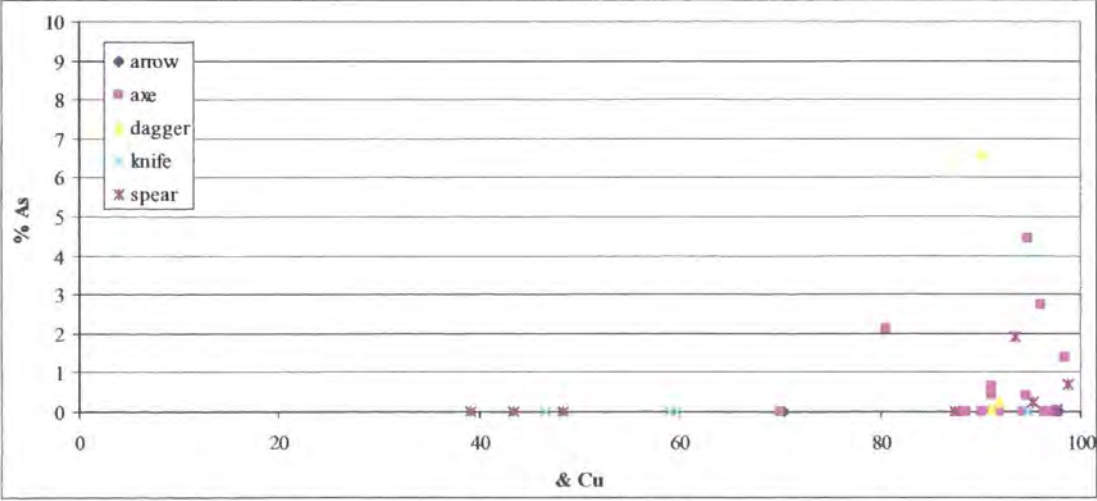


Fig. 4.42. Levels of arsenic in Indus weapons.

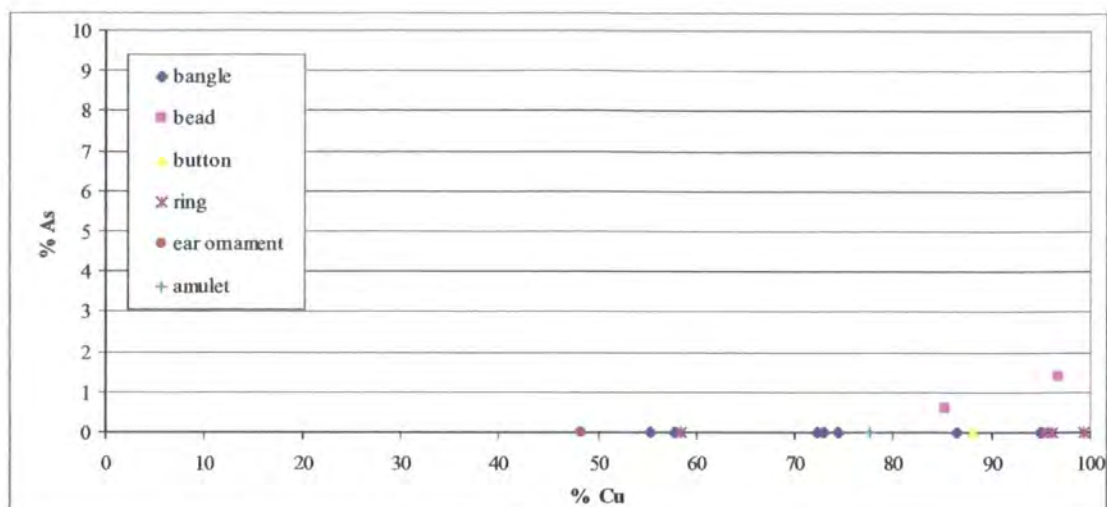


Fig. 4.43. Levels of arsenic in Indus personal adornment.

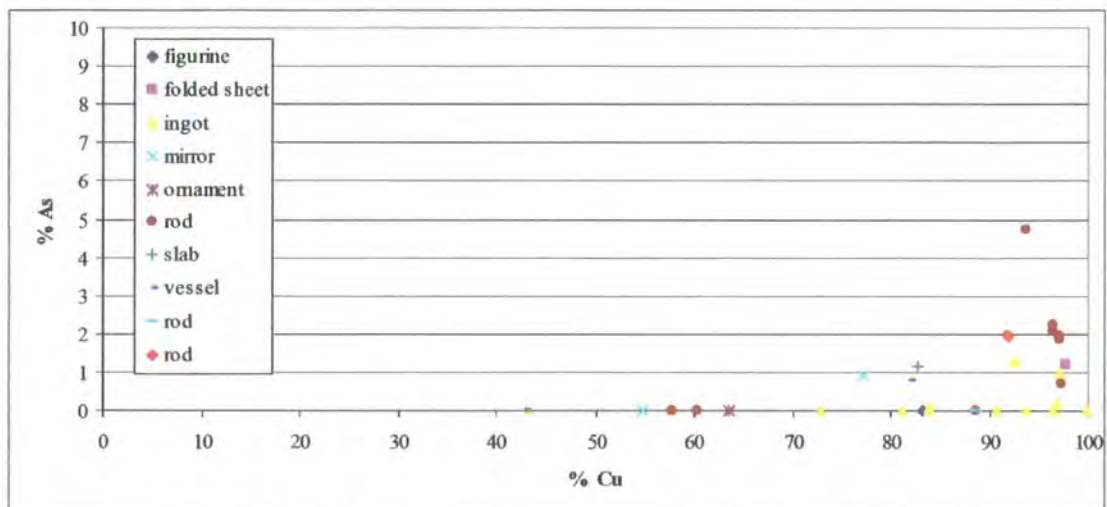


Fig. 4.44. Levels of arsenic in miscellaneous Indus metalwork.

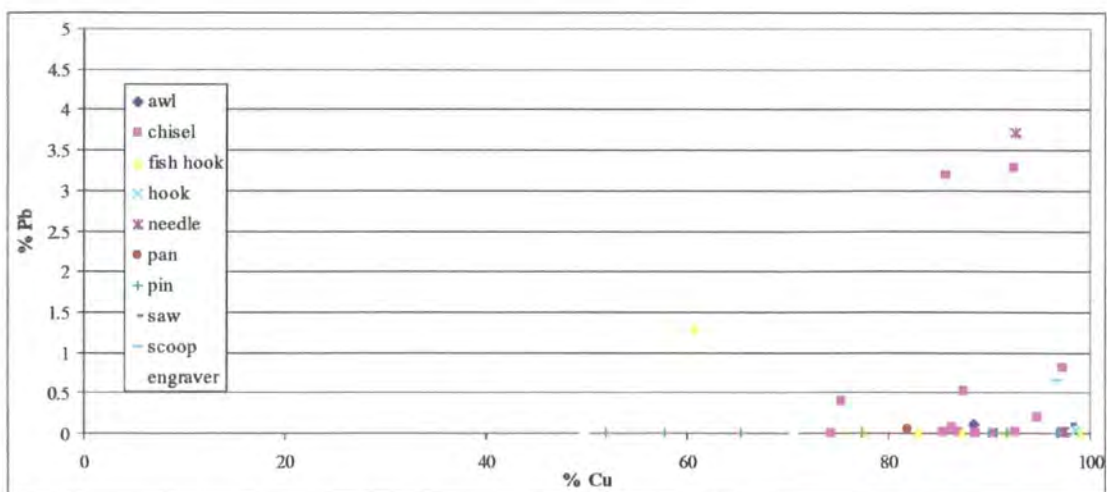


Fig. 4.45. Levels of lead in Indus tools.

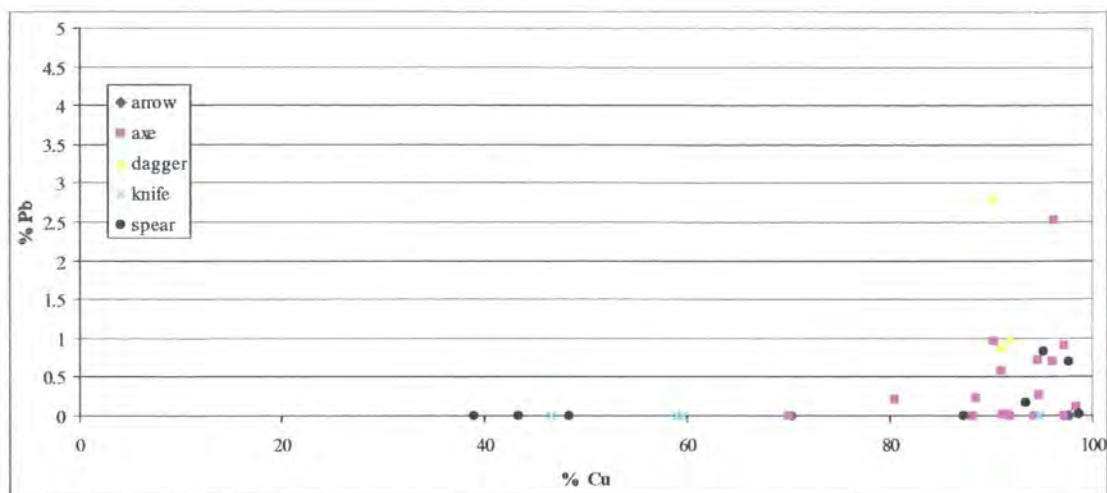


Fig. 4.46. Levels of lead in Indus weapons.

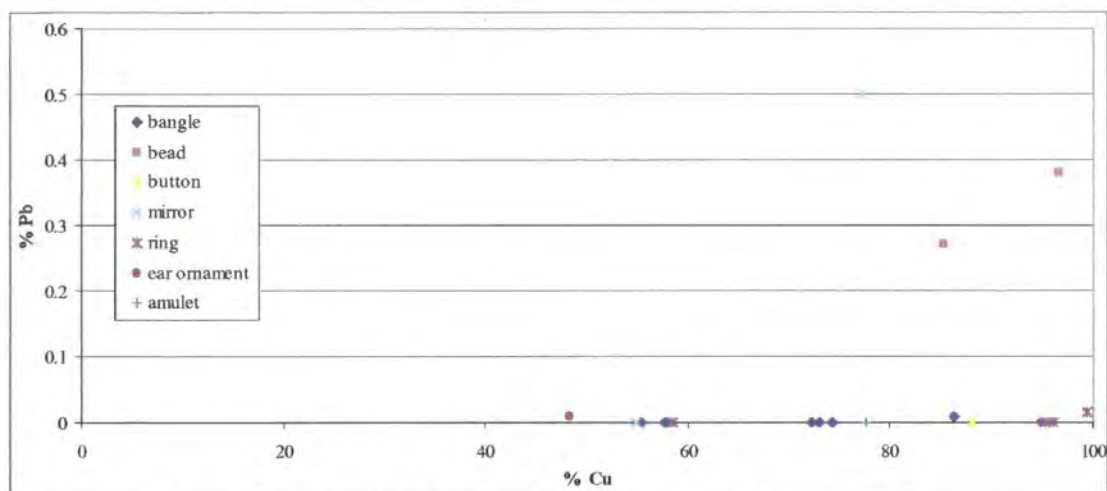
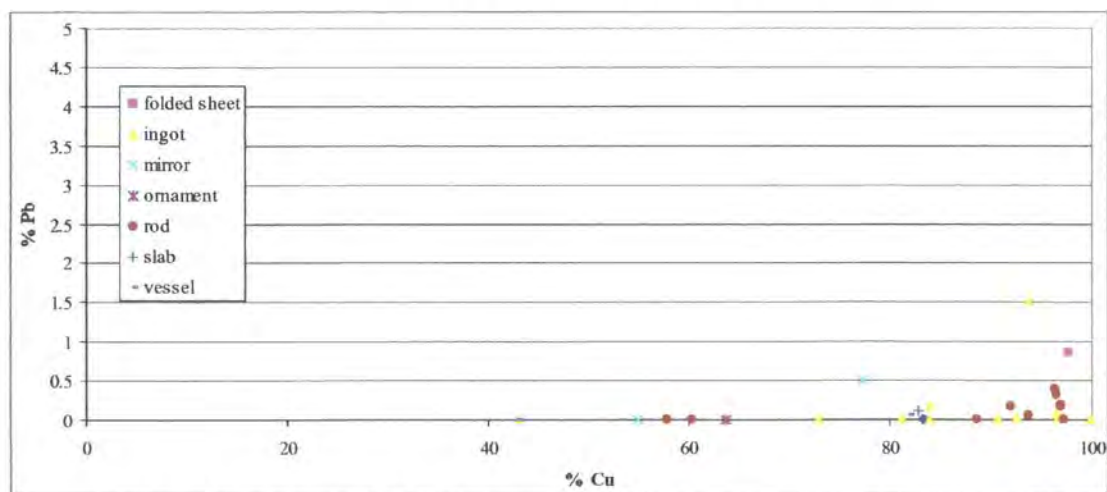


Fig. 4.47. Levels of lead in Indus personal adornment.



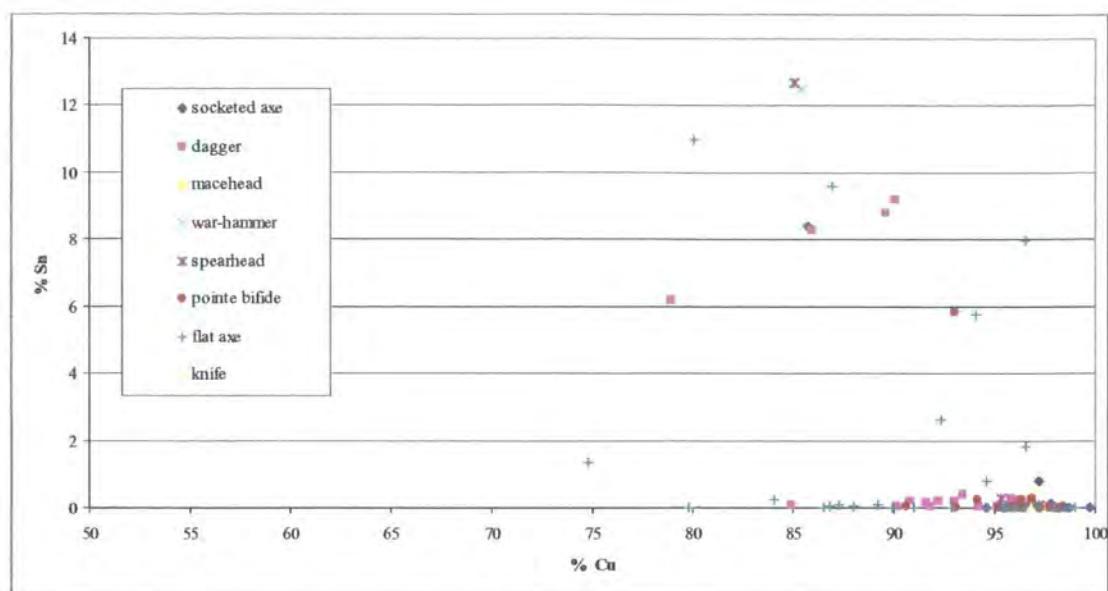


Fig. 4.49. Levels of tin in weapons from Susa.

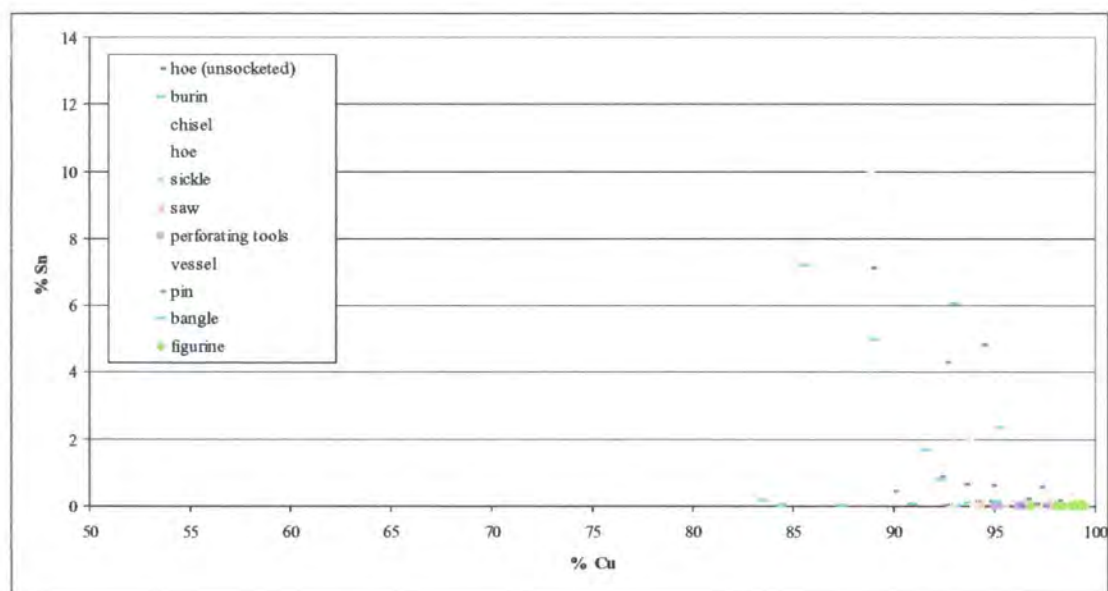


Fig. 4.50. Levels of tin in metalwork from Susa.

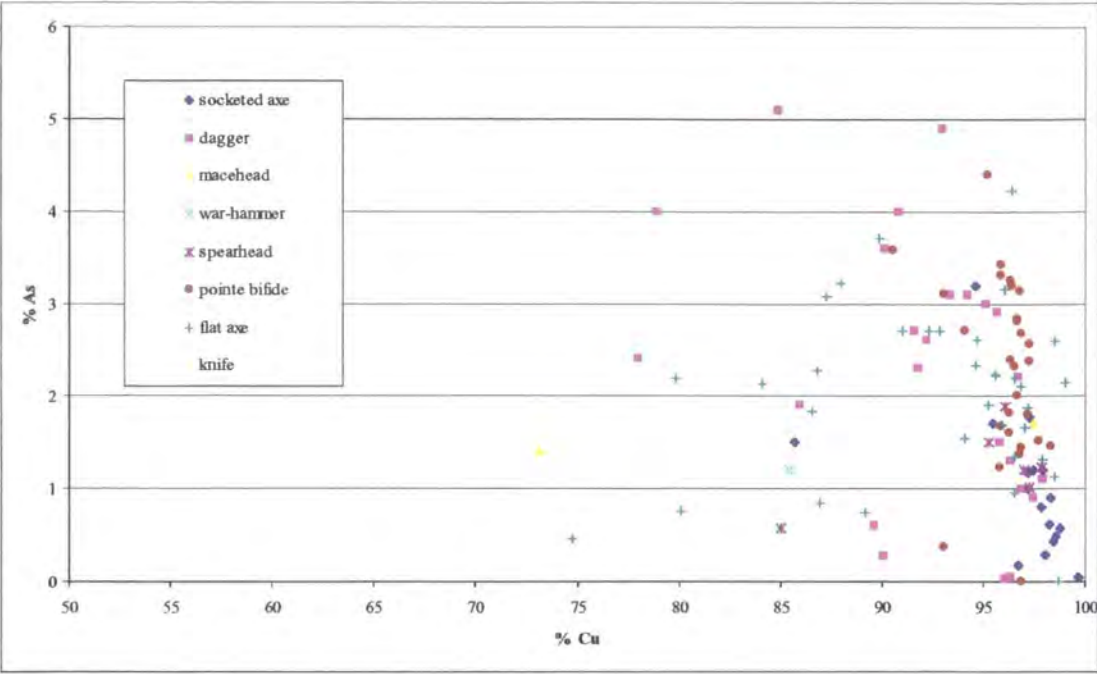


Fig. 4.51. Levels of arsenic in weapons from Susa.

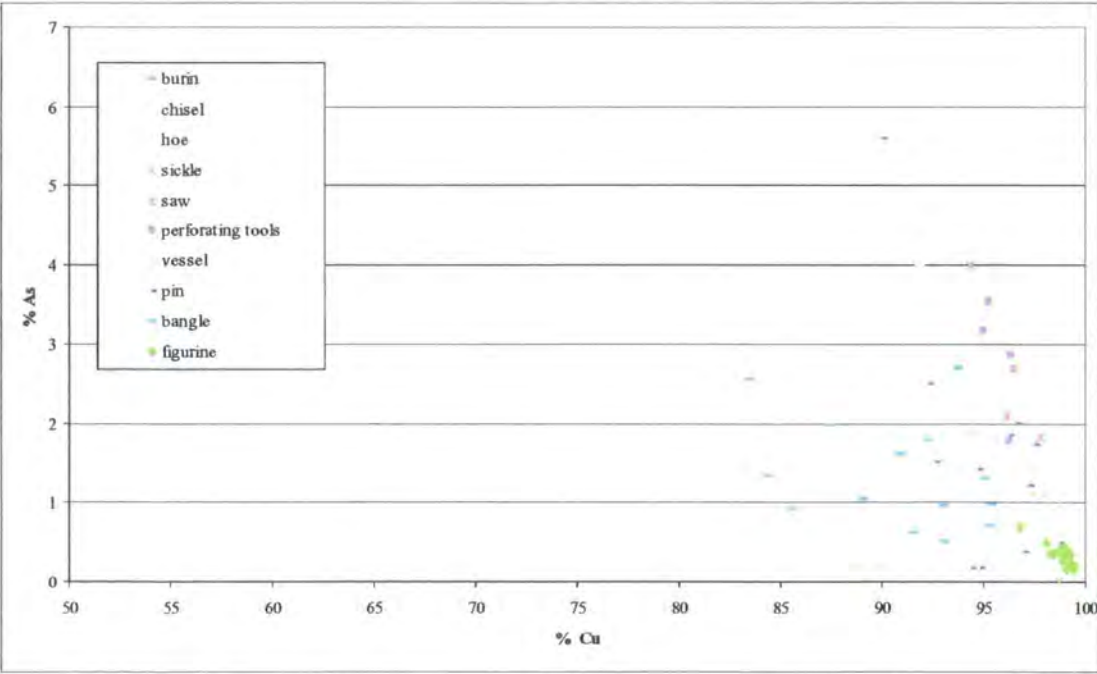


Fig. 4.52. Levels of arsenic in metalwork from Susa.

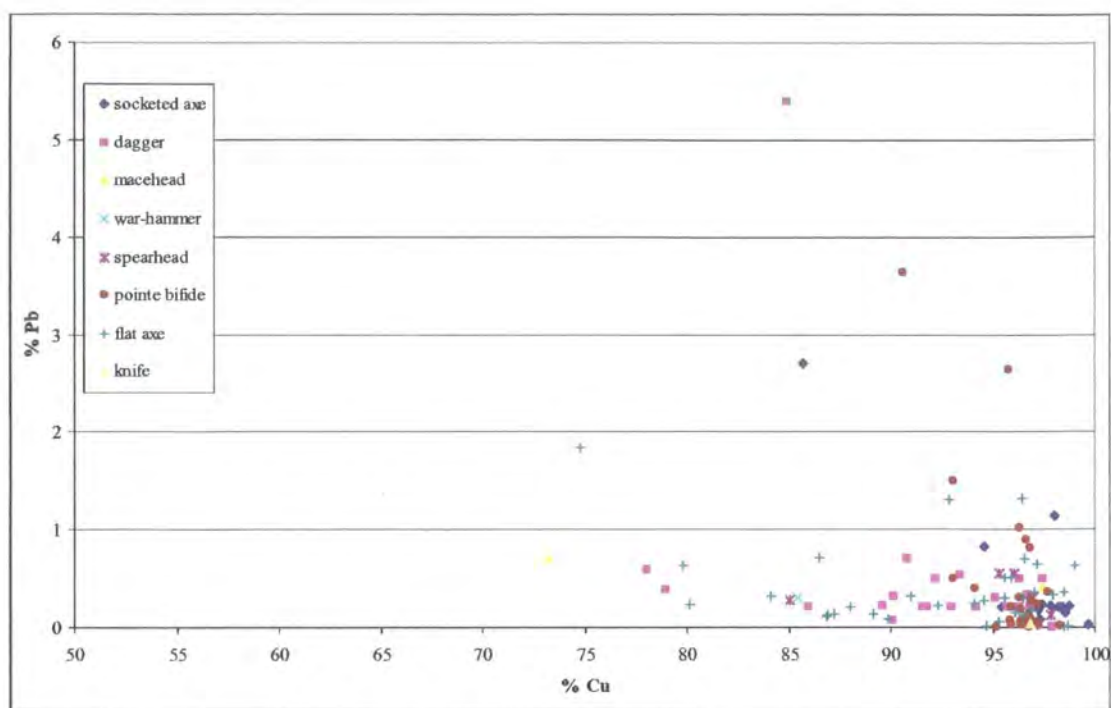


Fig. 4.53. Levels of lead in weapons from Susa.

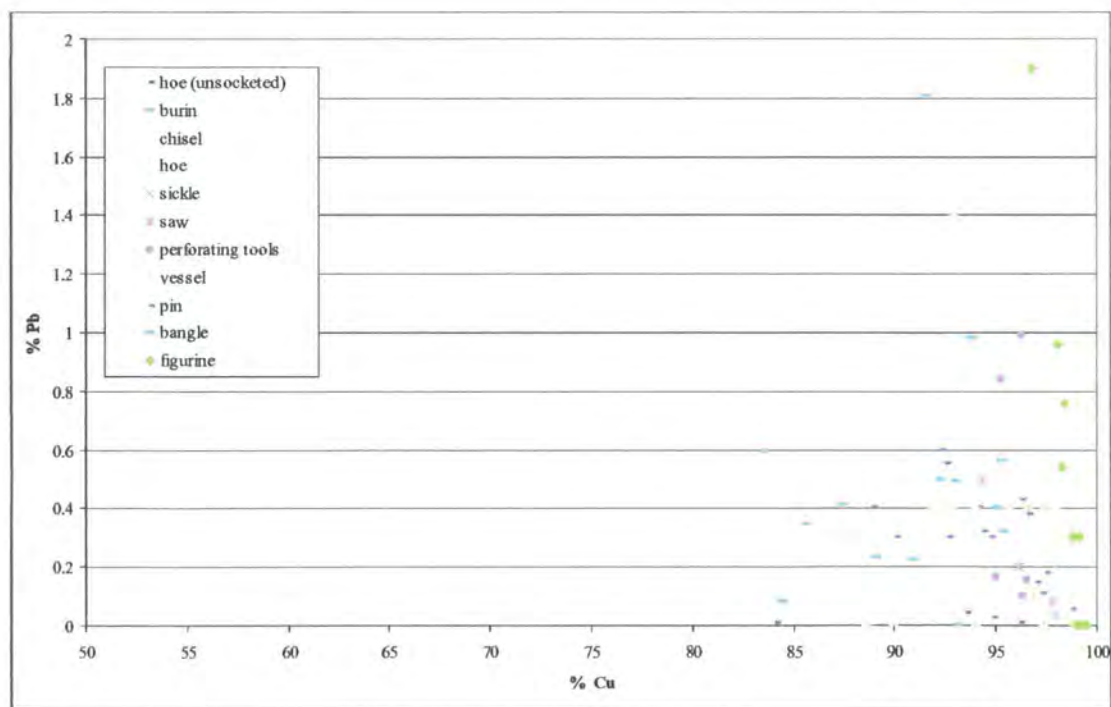


Fig. 4.54. Levels of lead in metalwork from Susa.

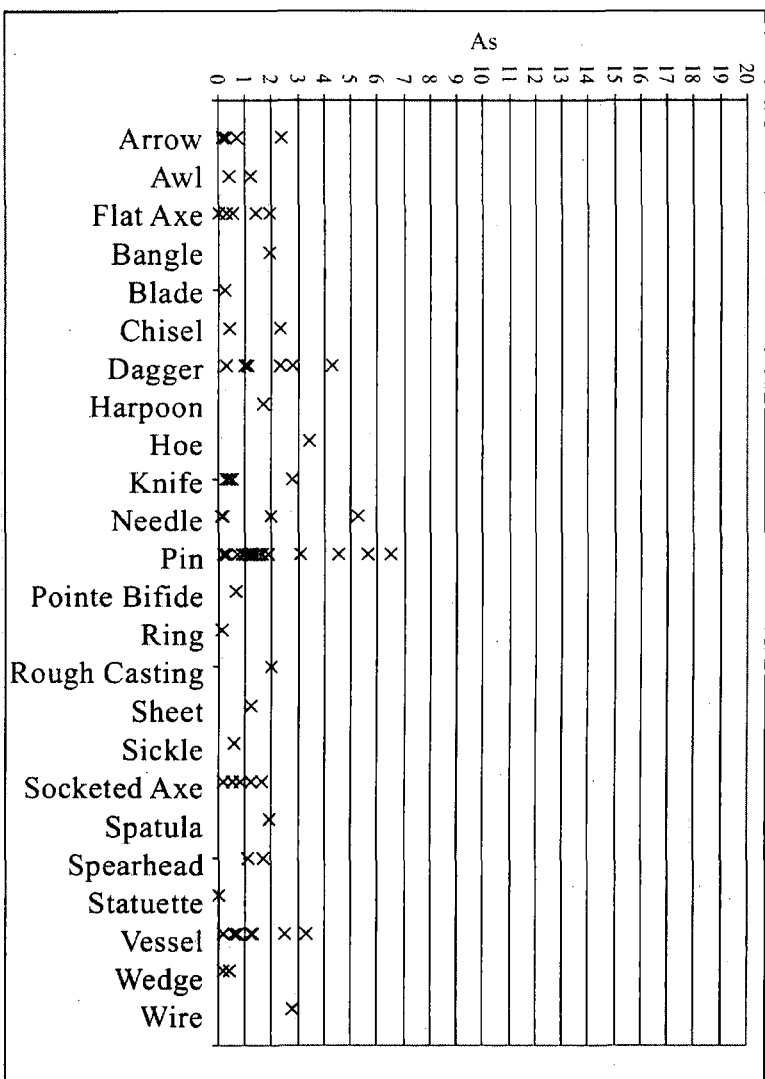


Fig. 4.55. Arsenic alloying in Mesopotamian metalwork

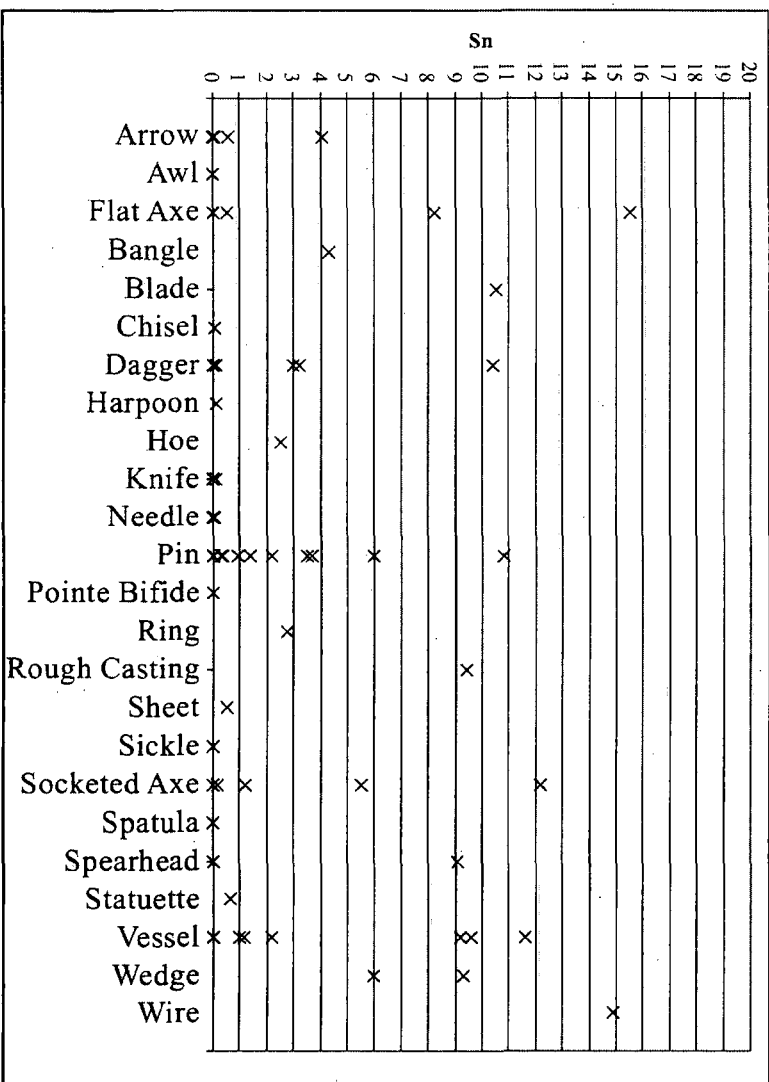


Fig. 4.56. Tin alloying in Mesopotamian metalwork

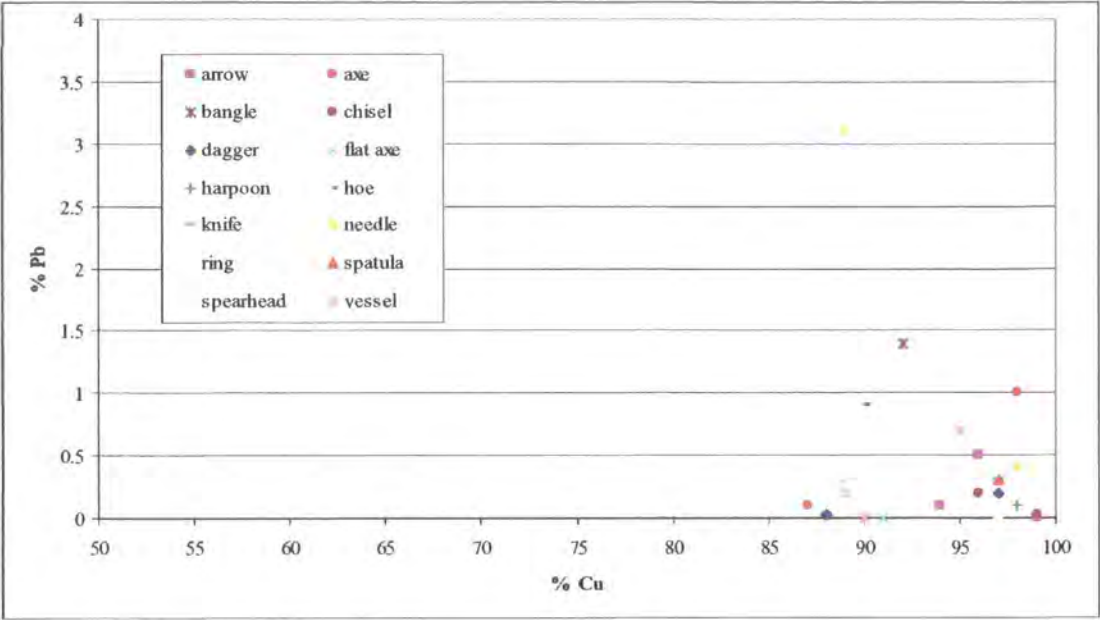


Fig. 4.57. Levels of lead in metalwork from Uruk.

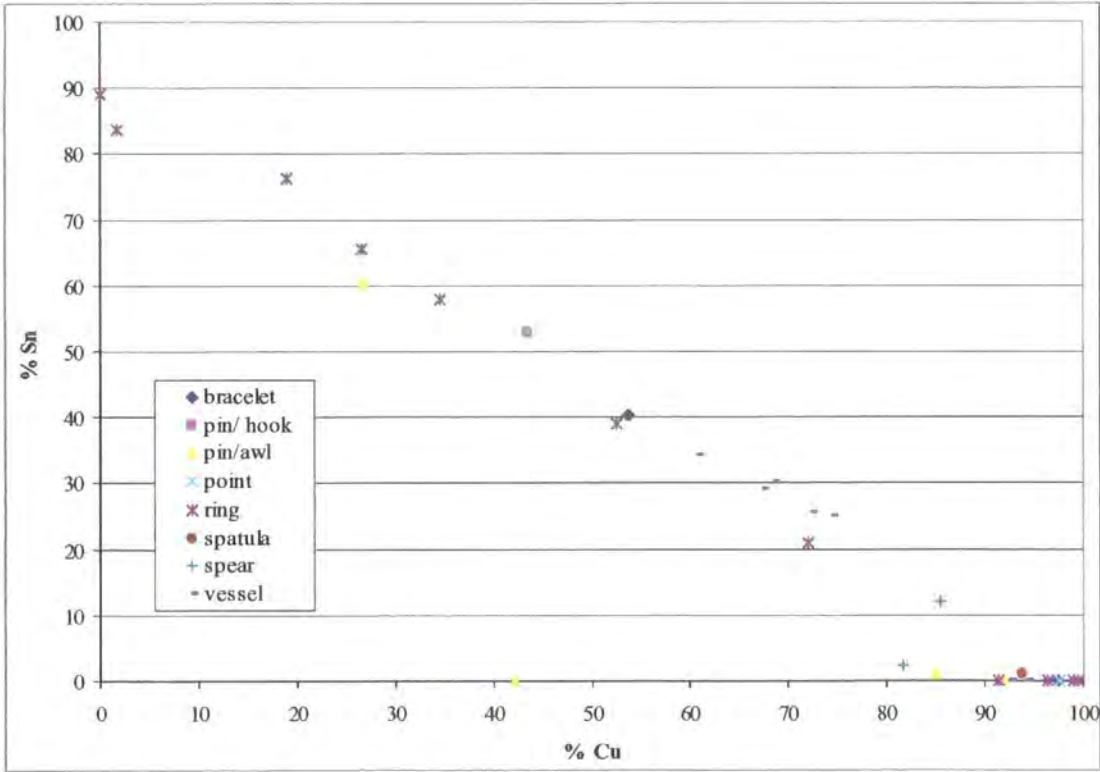


Fig. 4.58. Levels of tin in metalwork at Abraq.

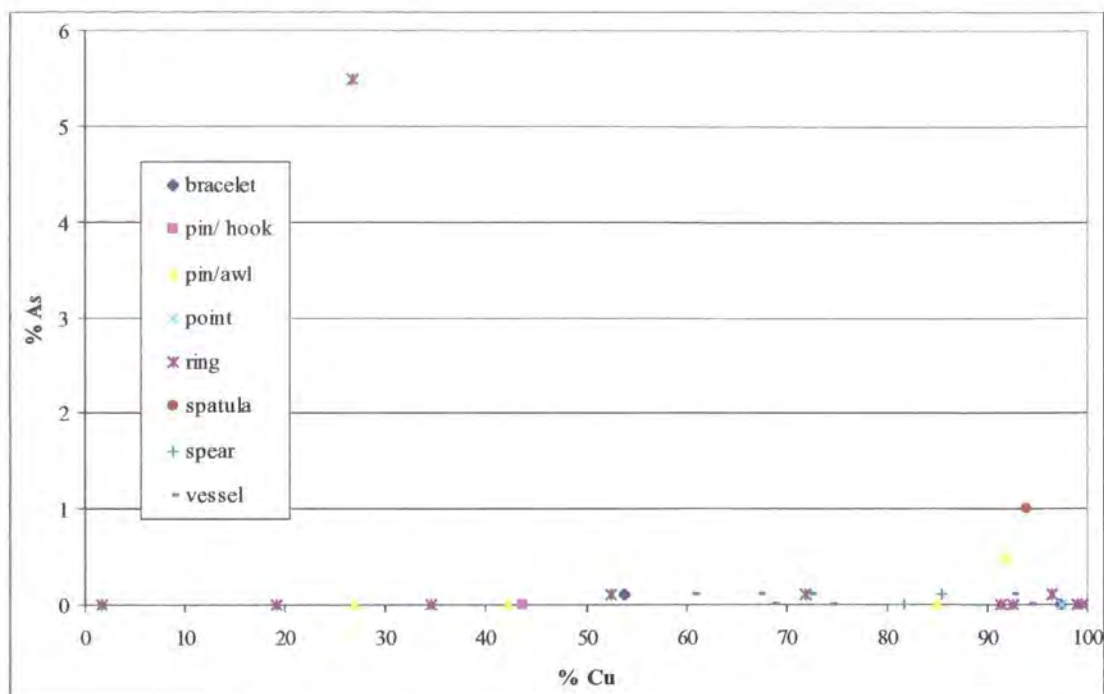


Fig. 4.59. Levels of arsenic in metalwork at Abraq.

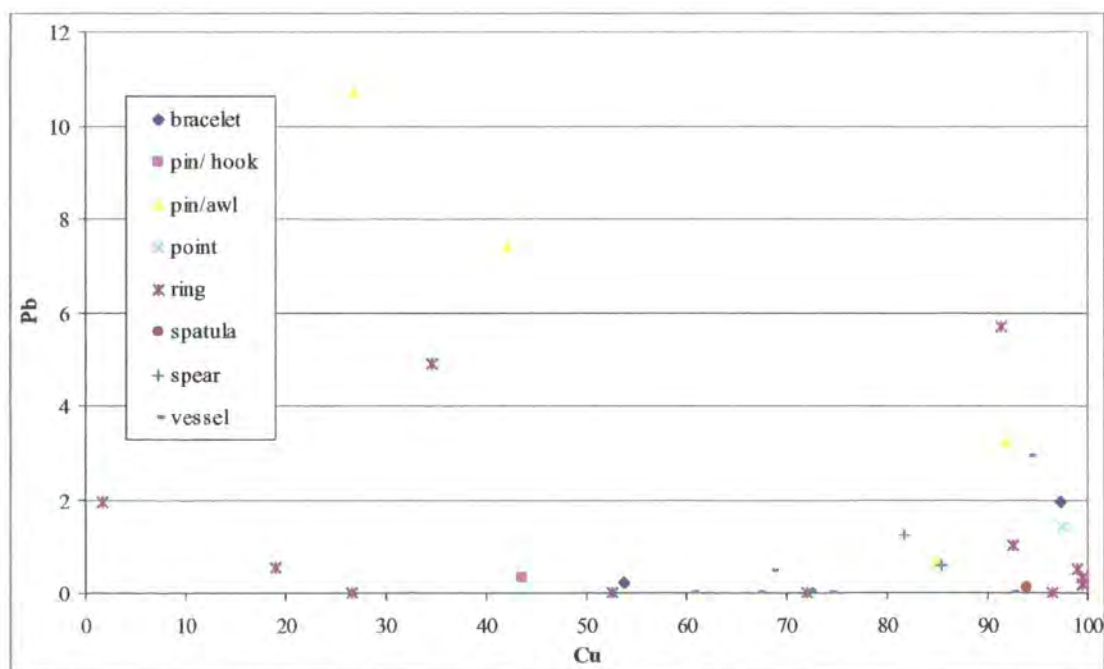


Fig. 4.60. Levels of lead metalwork at Abraq.

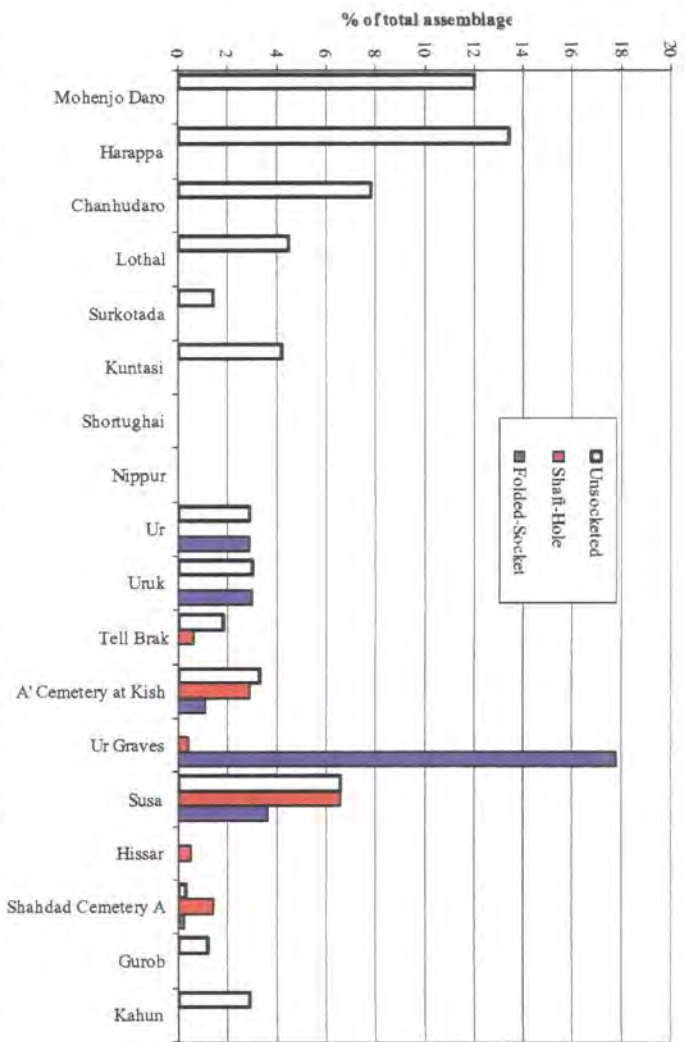


Fig. 4.61. Distribution of axe technologies (as % of overall site assemblage).

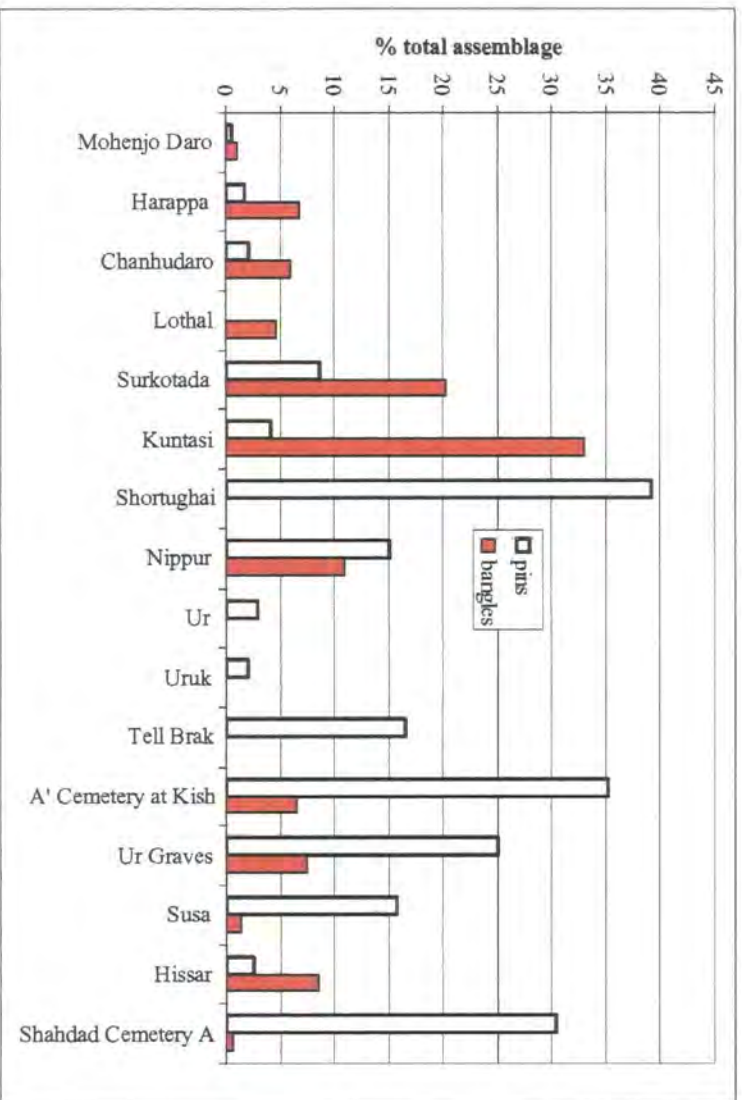


Fig. 4.62. Relative proportions of pins and bangles (excluding Egypt).



Fig. 4.63. Male bust from HR area with visible hairpin.

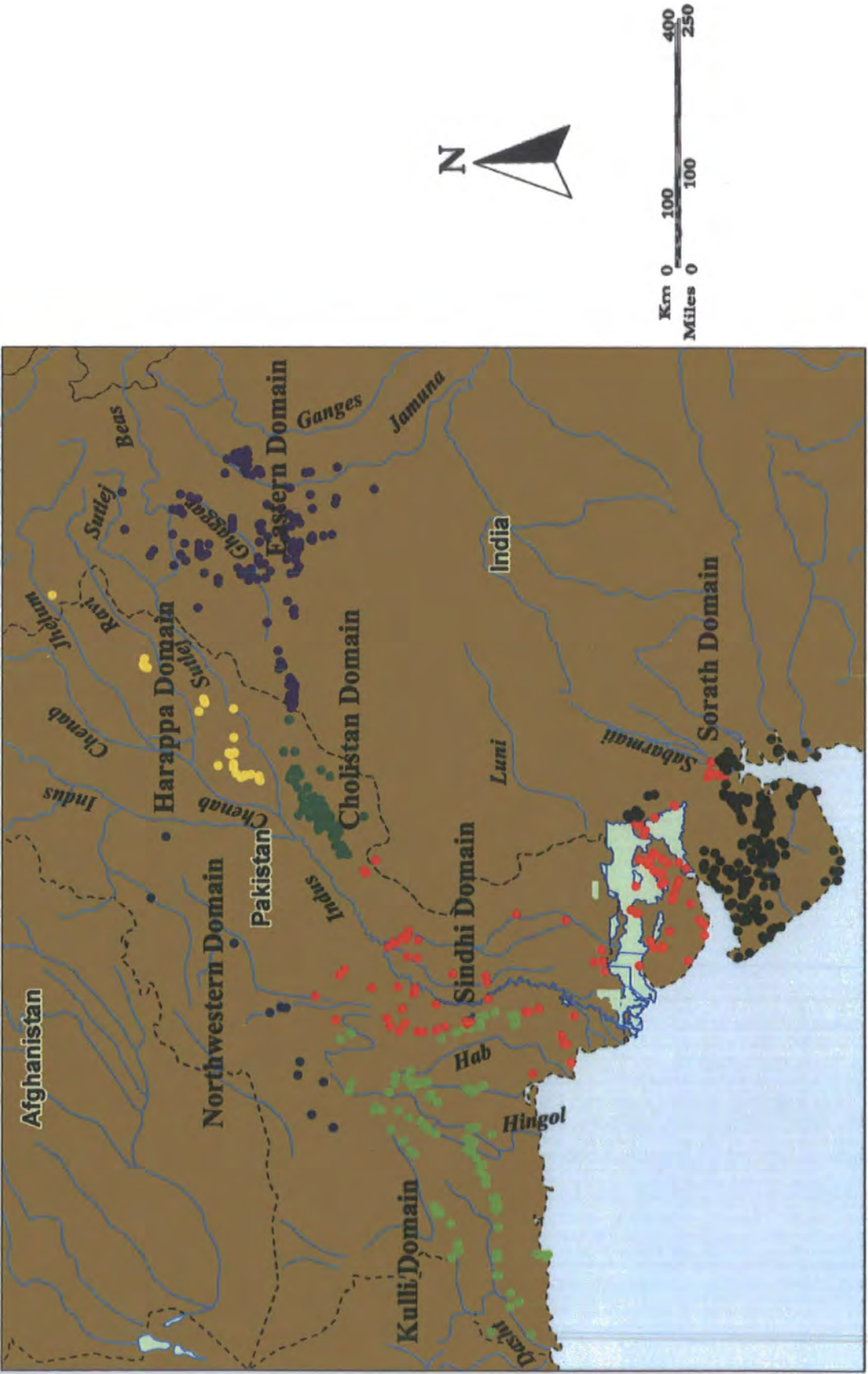


Fig. 5.1. Possehl's five Indus 'Domains'.

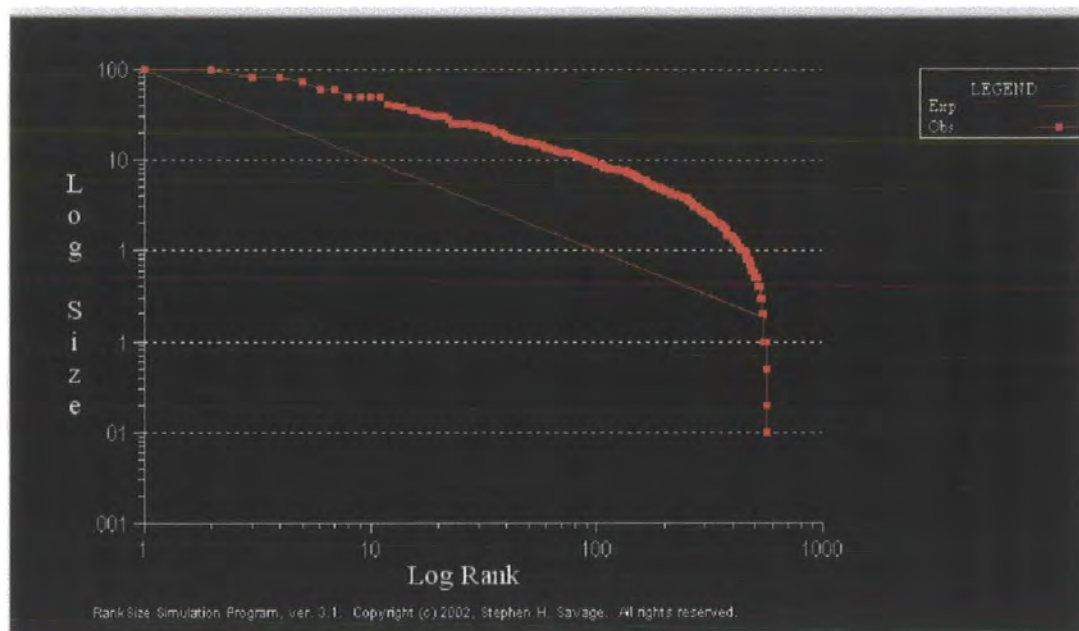


Fig. 5.2. Distribution of all Mature Harappan sites, displaying a marked convex trend.

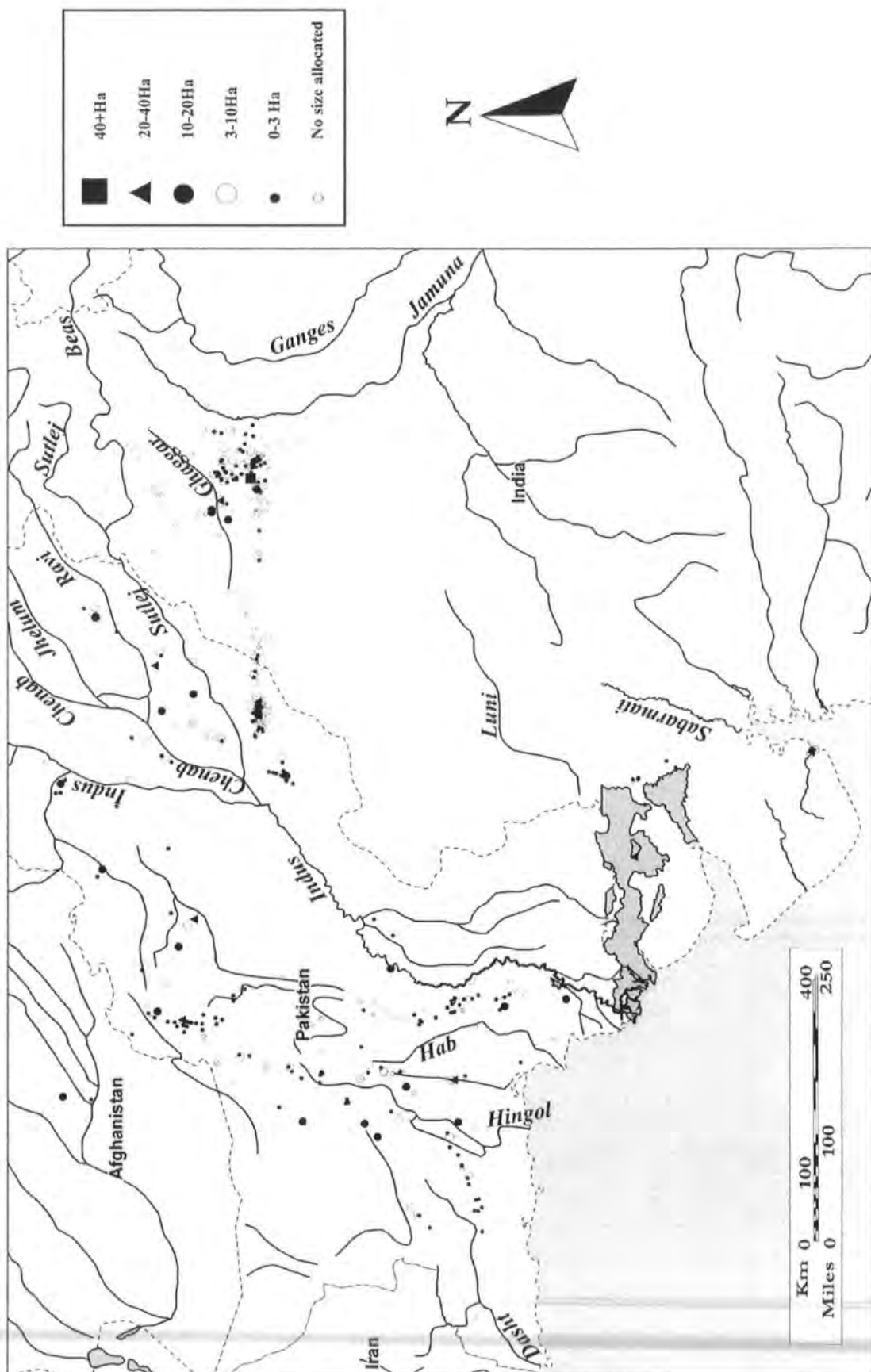


Fig. 5.3. Early Harappan sites in Posschl's database

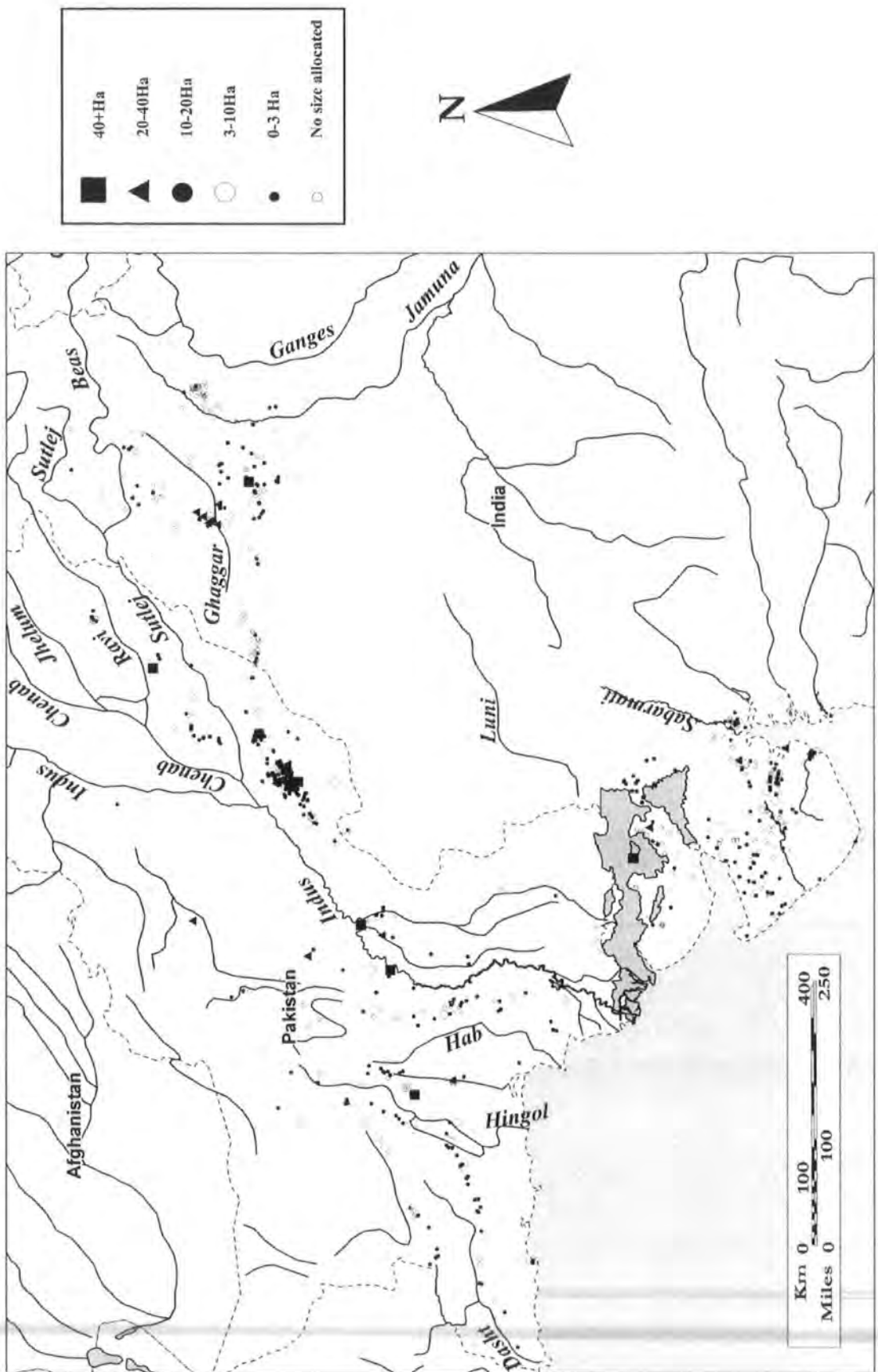


Fig. 5.4. Mature Harappan sites in Posschl's database

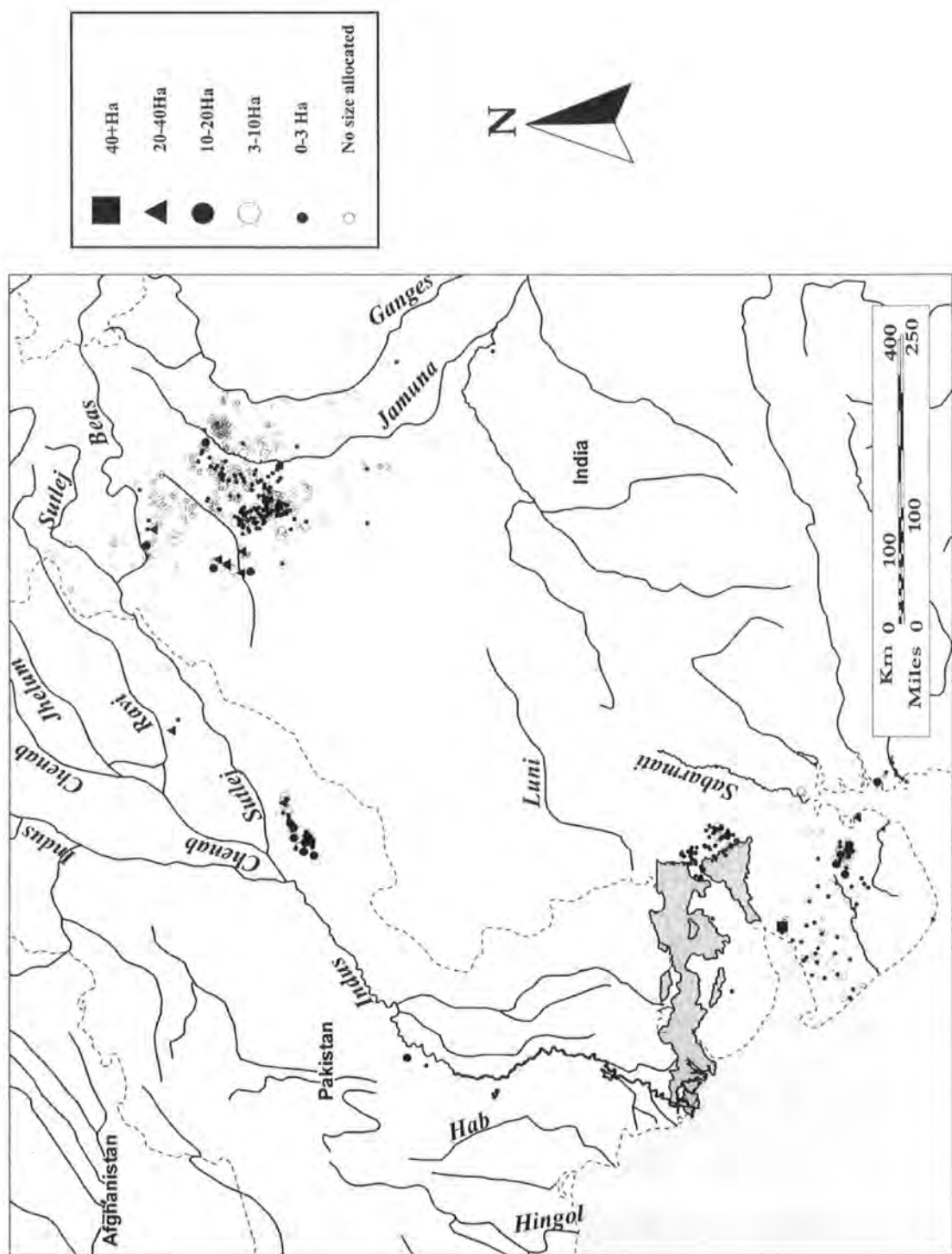


Fig. 5.5. Late Harappan sites in Possehl's database

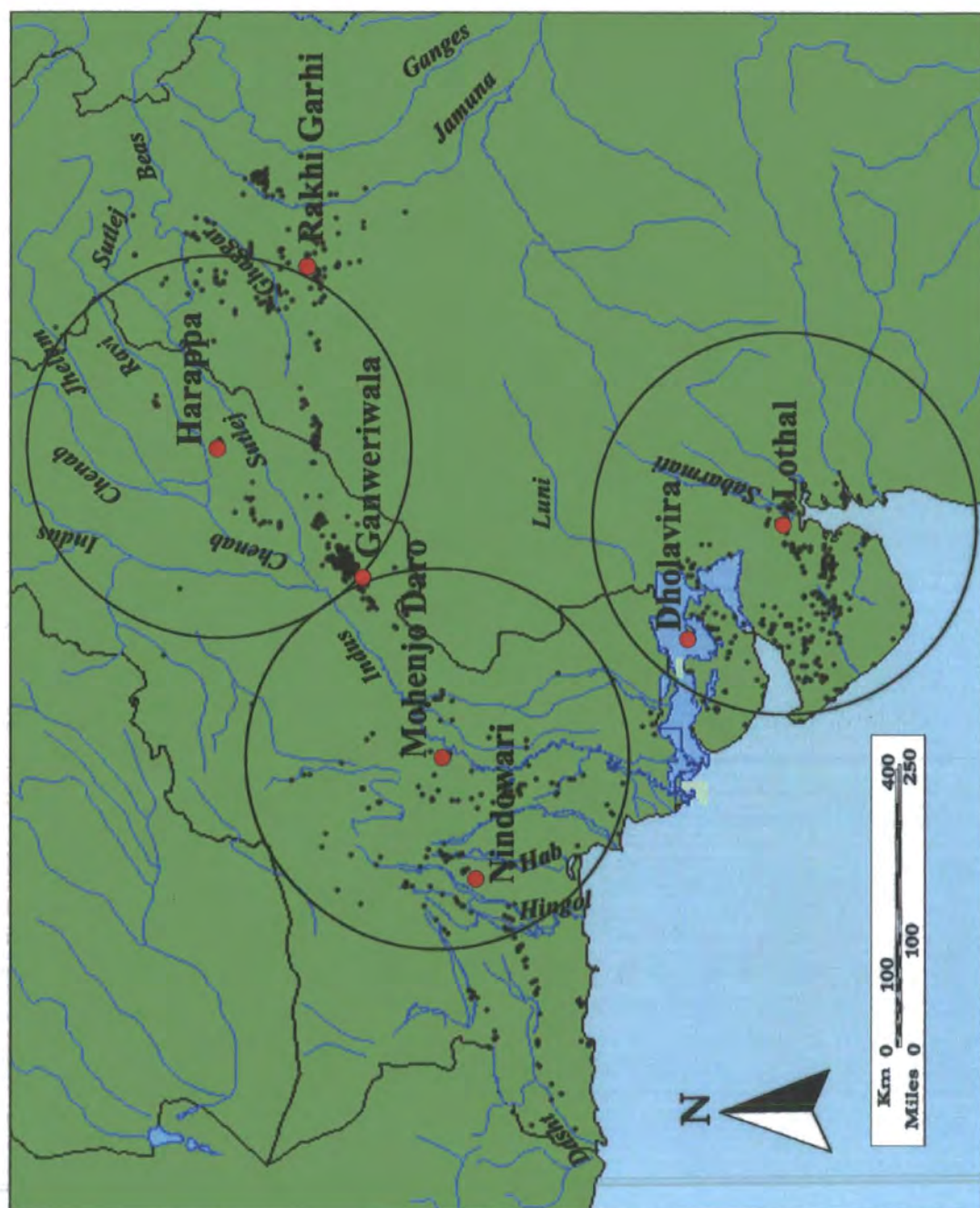


Fig. 5.6. The equidistance of some large Harappan sites.

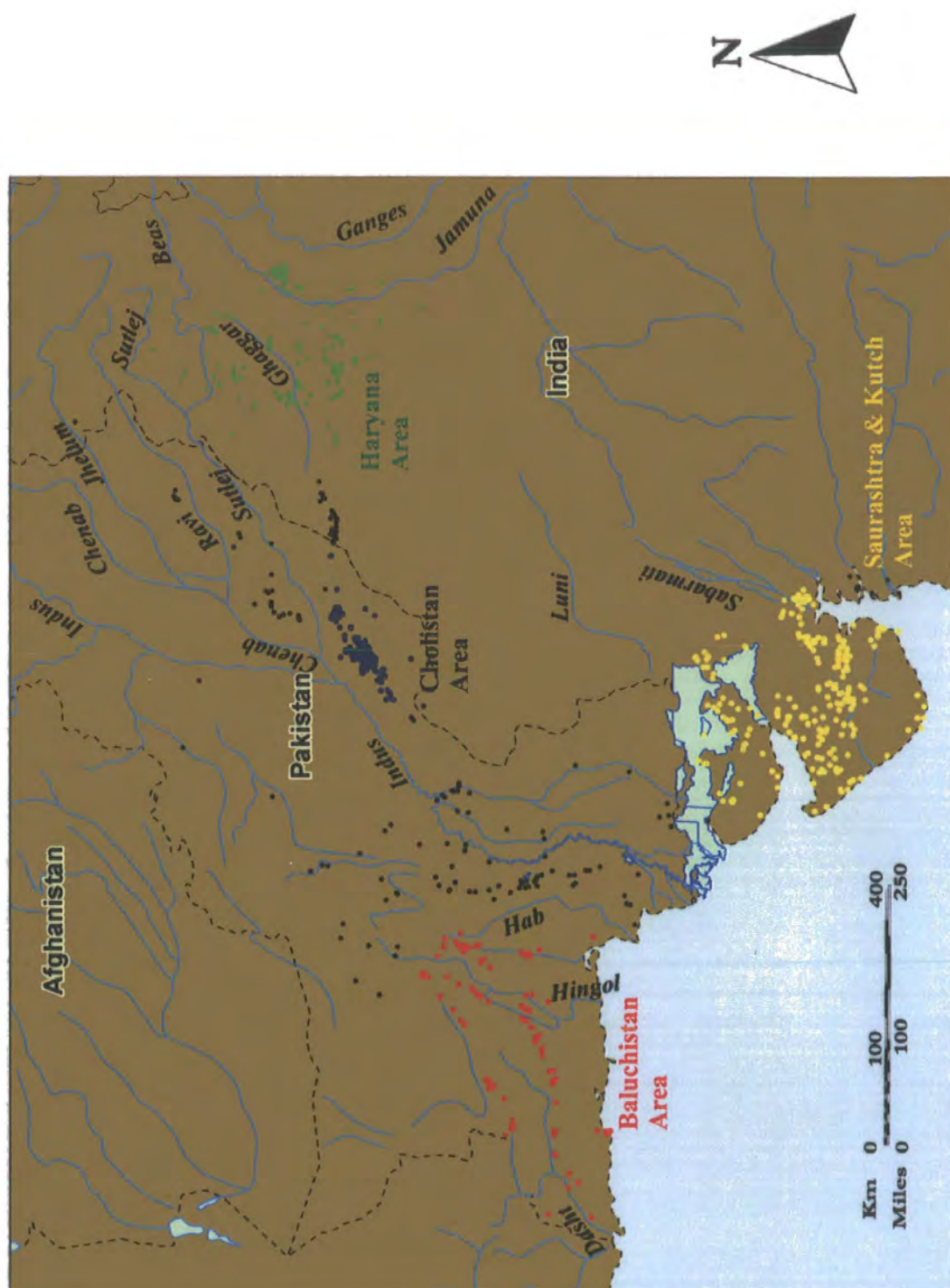


Fig. 5.7. The four Indus areas analysed in this study.

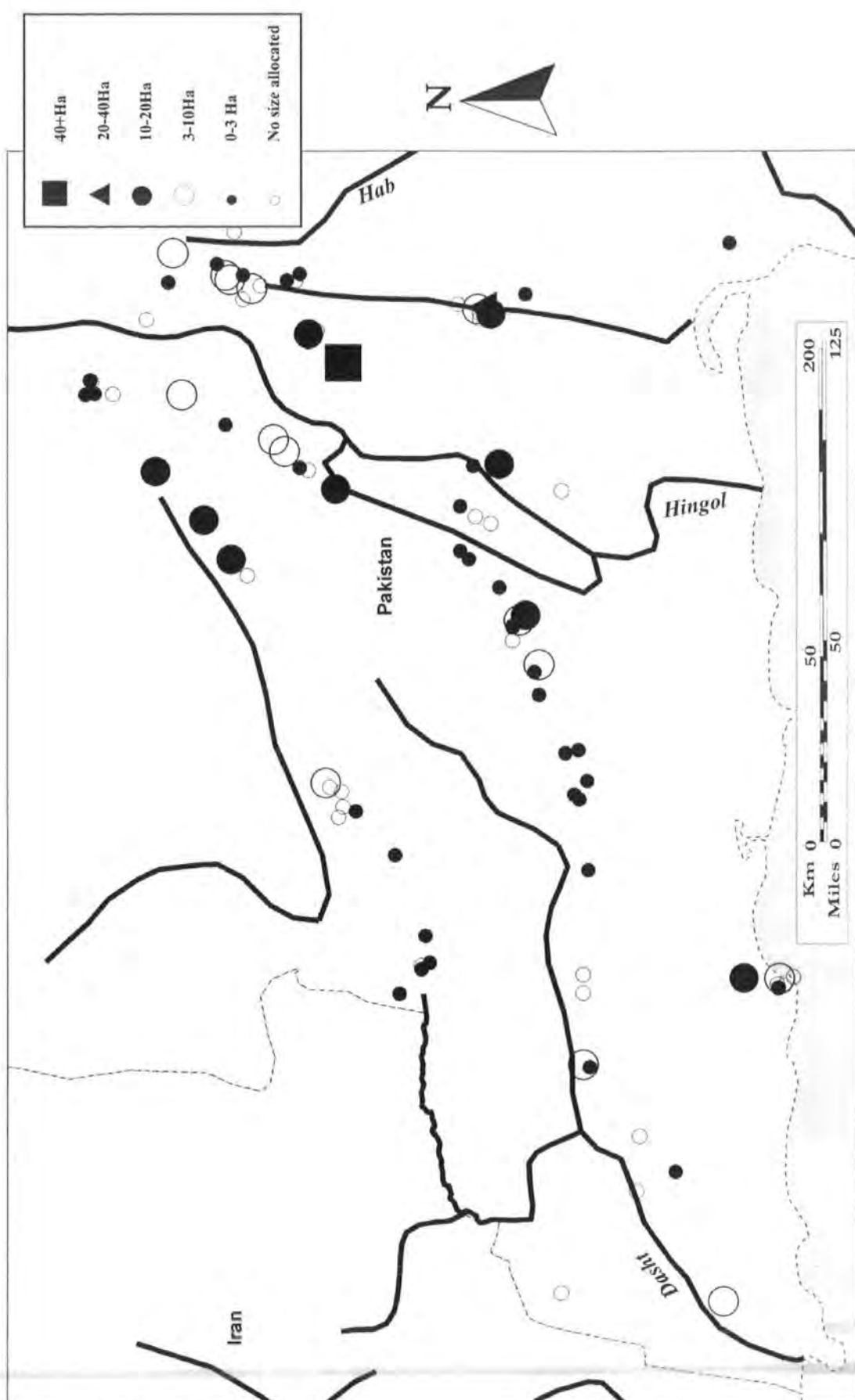


Fig. 5.8. Sites in the Baluchistan area.

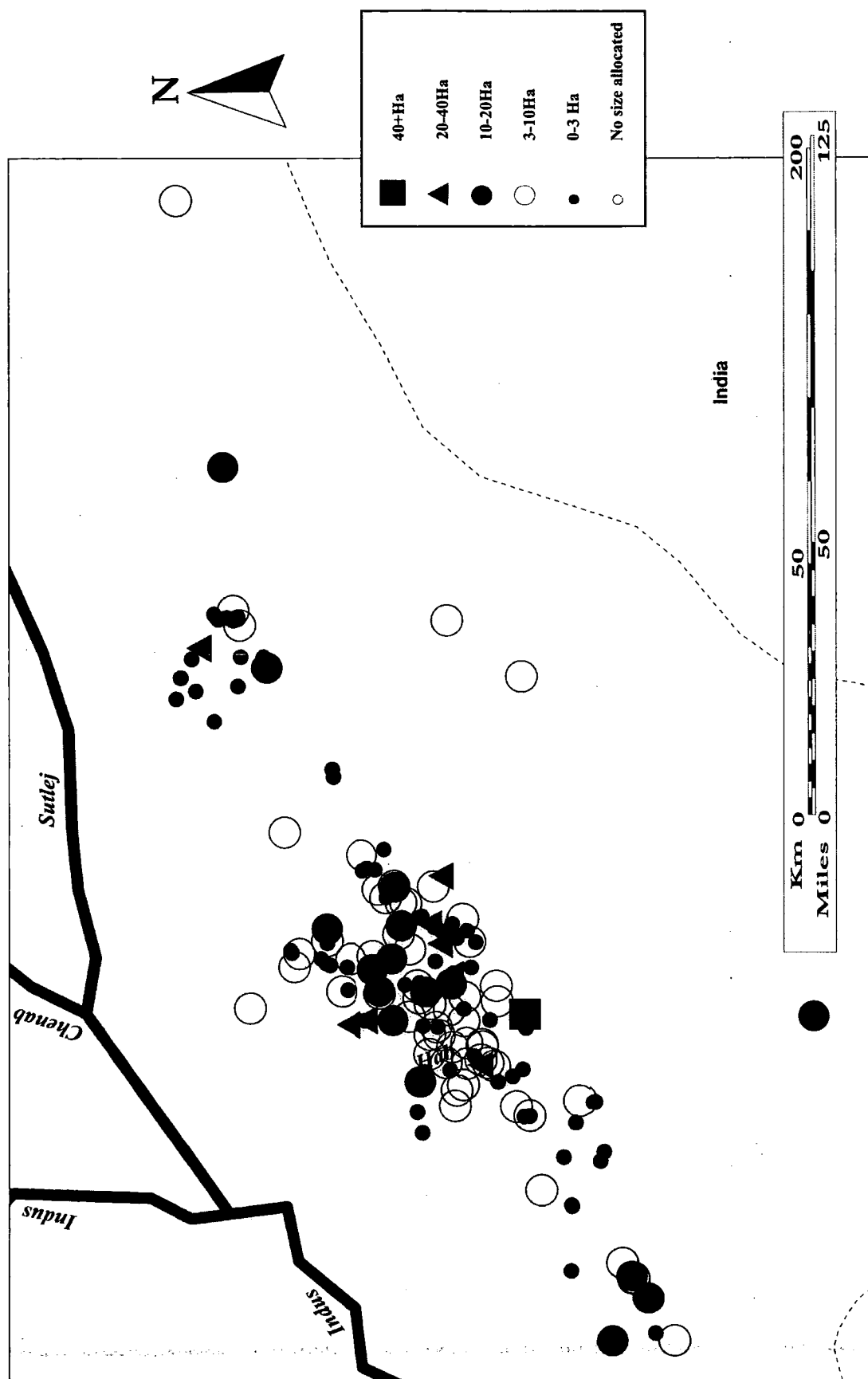


Fig. 5.9. Sites in the Cholistan area.

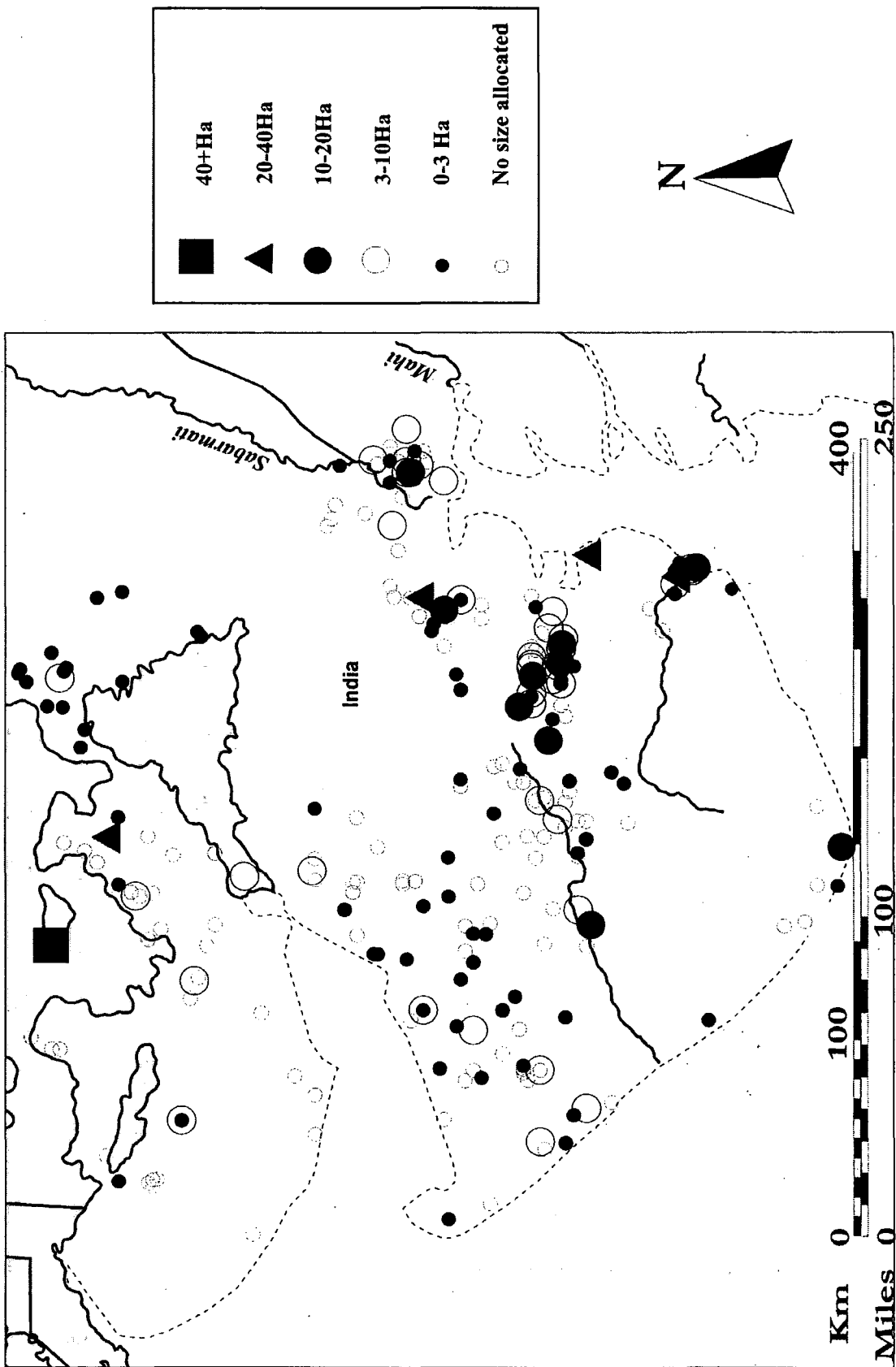


Fig. 5.10. Sites in the Saurashtra and Kutch area.

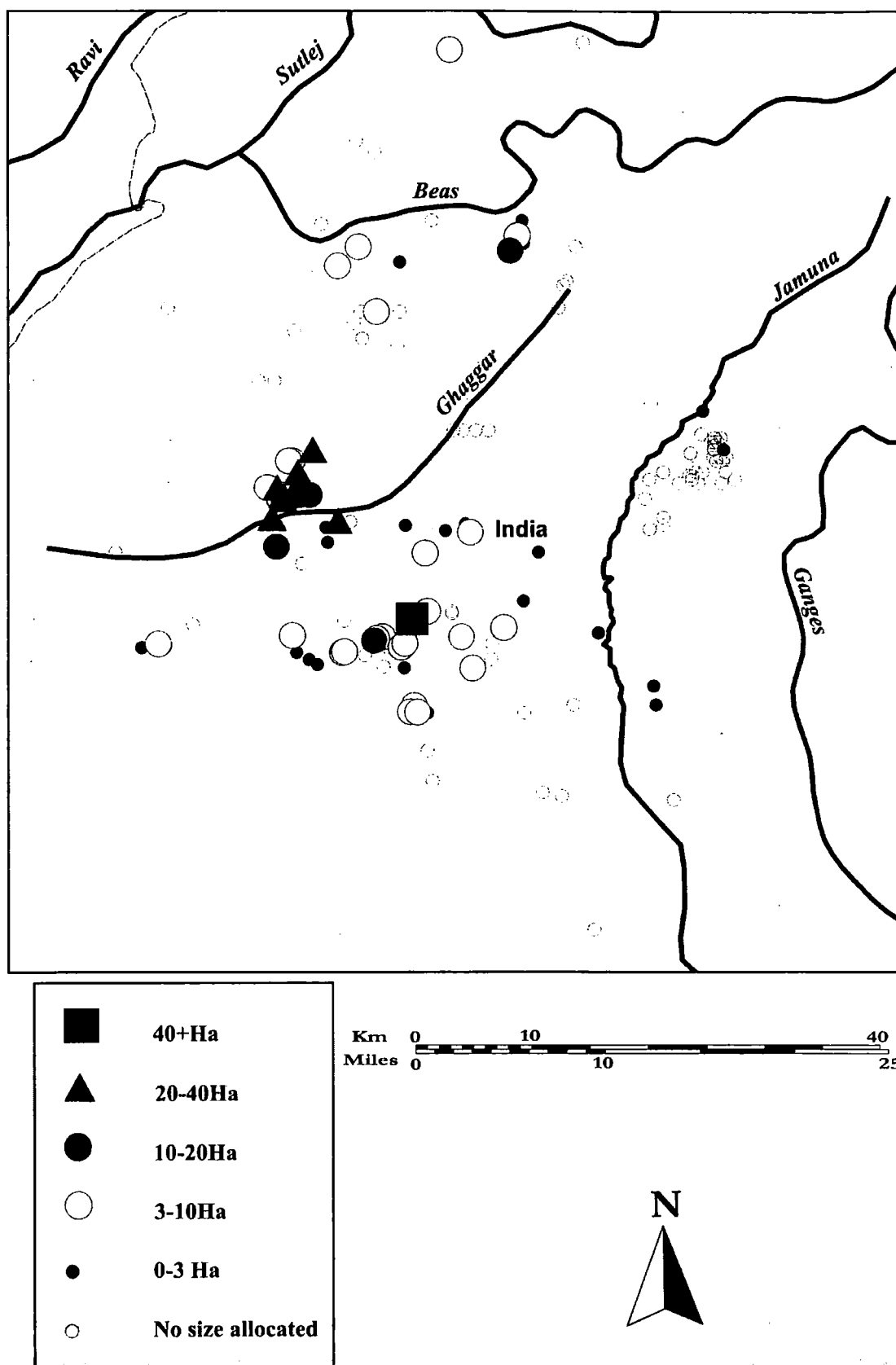


Fig. 5.11. Sites in the Haryana area.

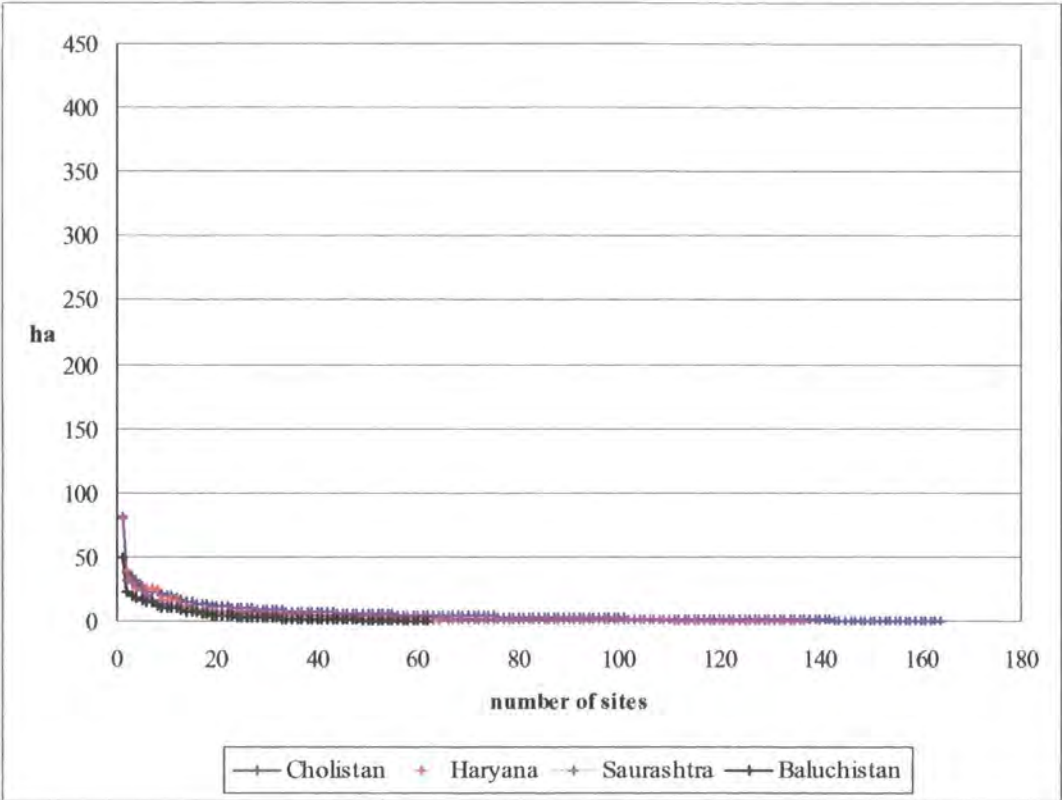


Fig. 5.12. Distribution of site sizes in the Indus Civilisation.

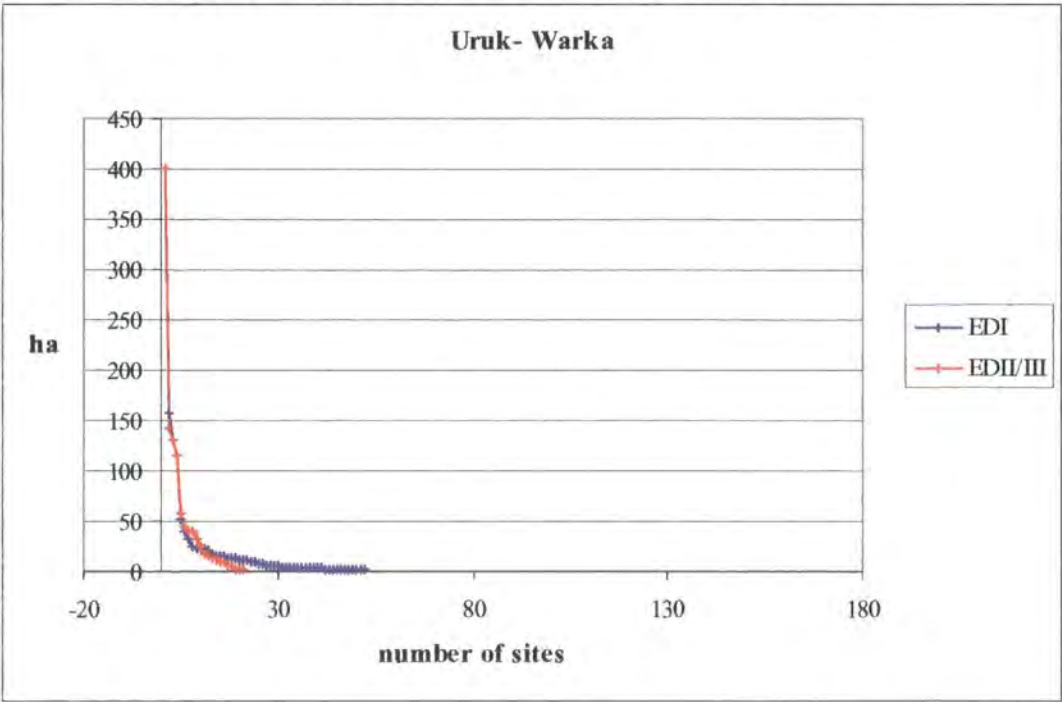


Fig. 5.13. Distribution of site sizes in the Uruk- Warka survey area.

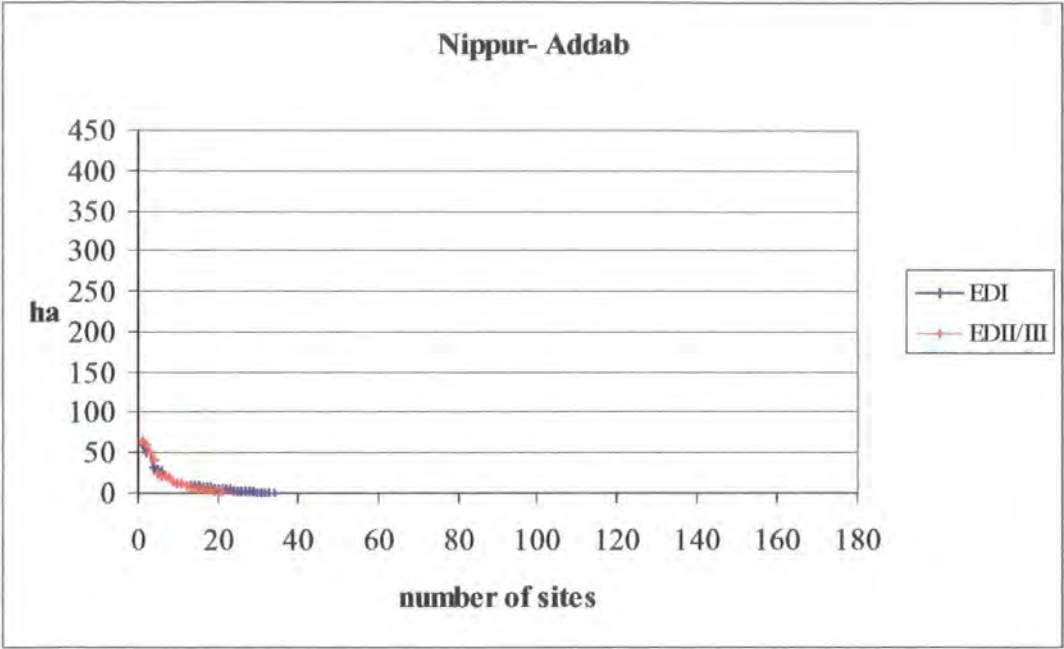


Fig. 5.14. Distribution of site sizes in Nippur-Adab survey area.

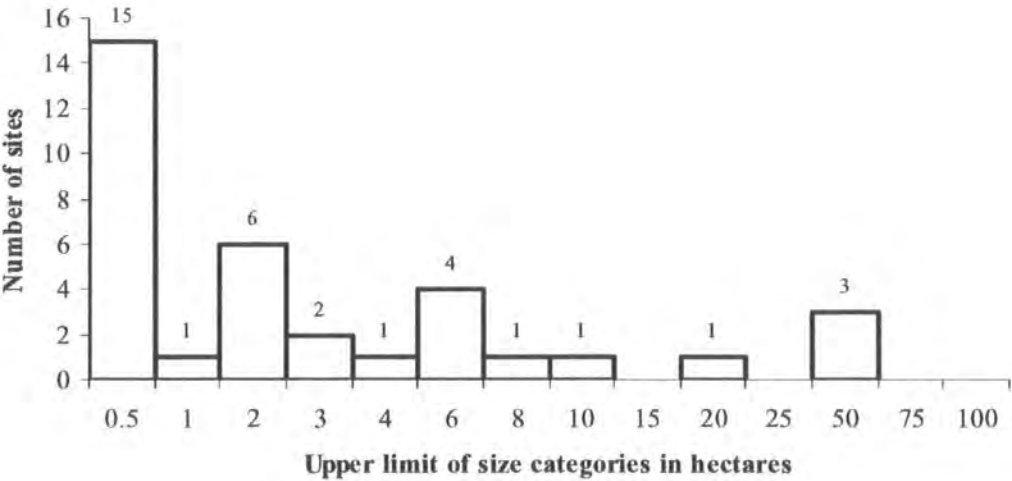


Fig. 5.15. Distribution of EDI site sizes in the Nippur-Adab survey region, after Adams (1981: 84).

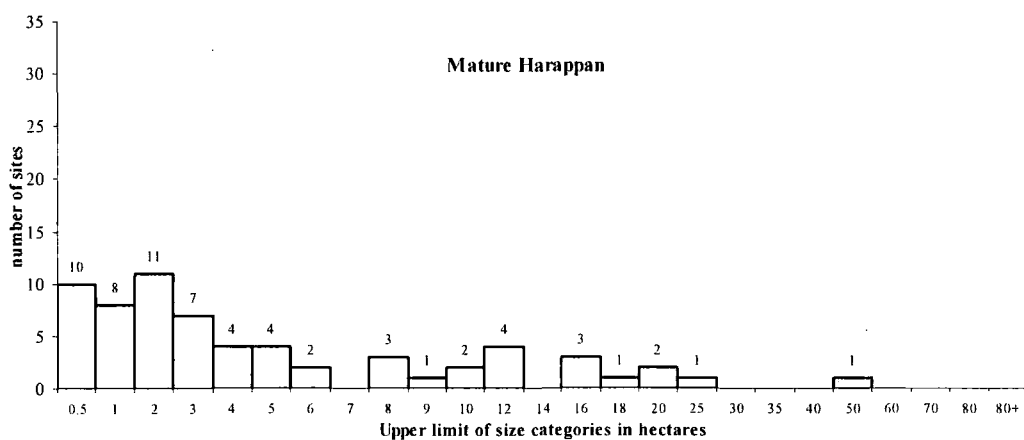
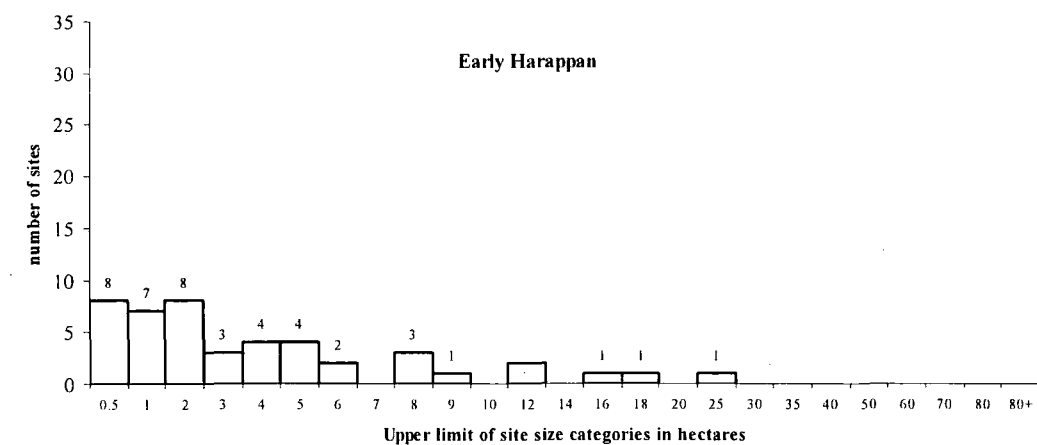


Fig. 5.16. Site size hierarchies for the Baluchistan area.

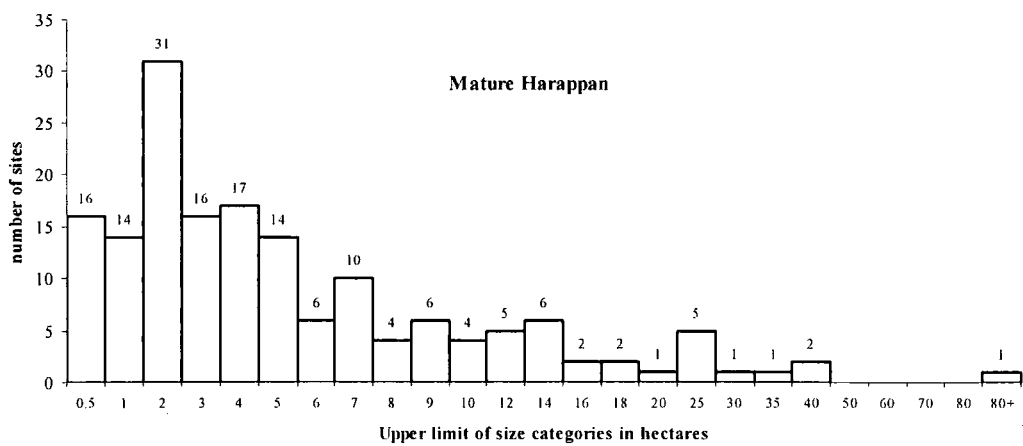
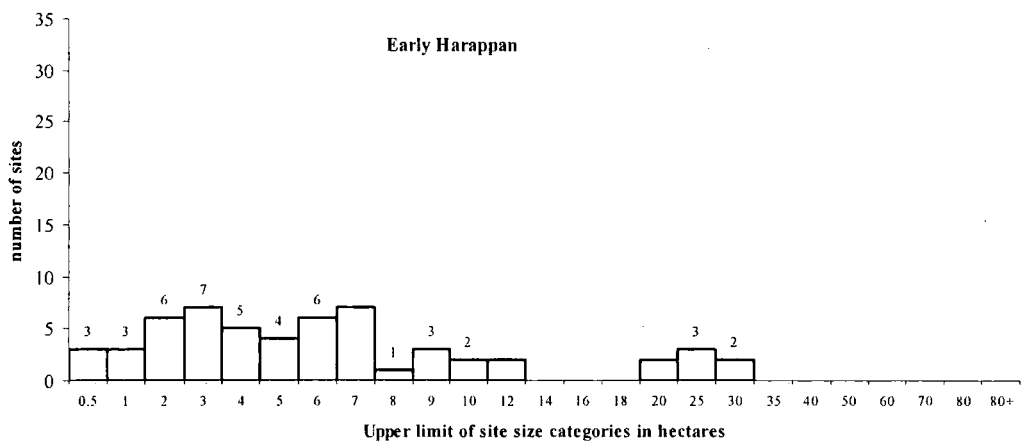


Fig. 5.17. Site size hierarchies for the Cholistan area.

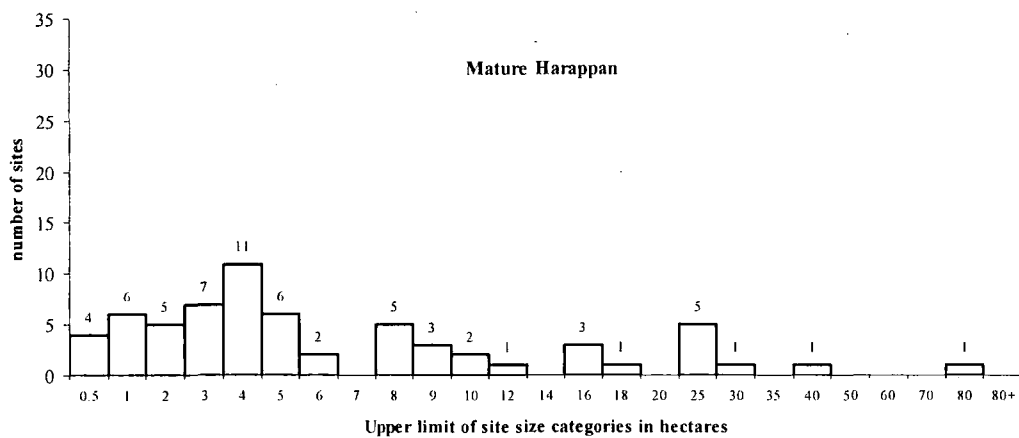
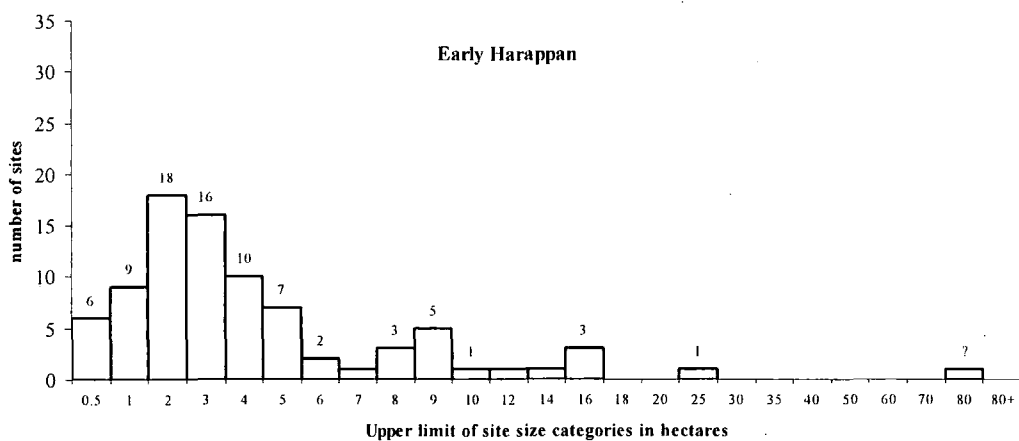


Fig. 5.18. Site size hierarchies in the Haryana area.

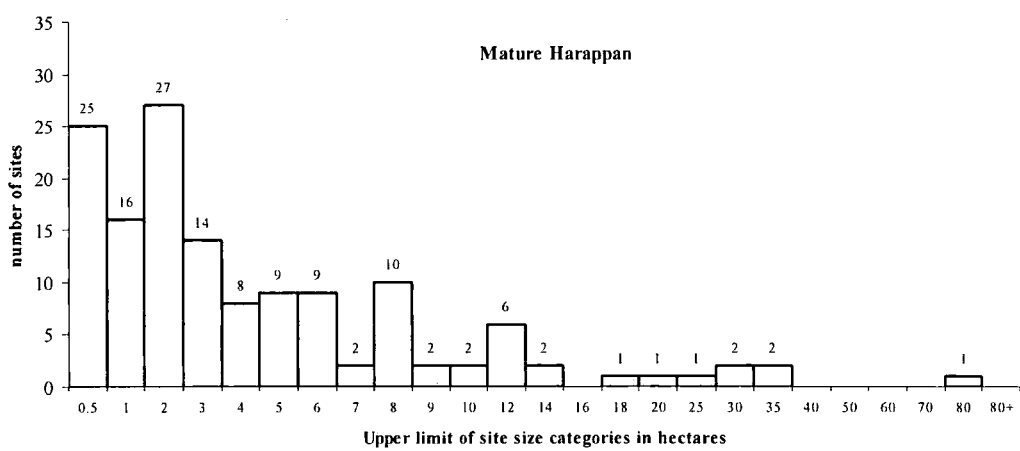
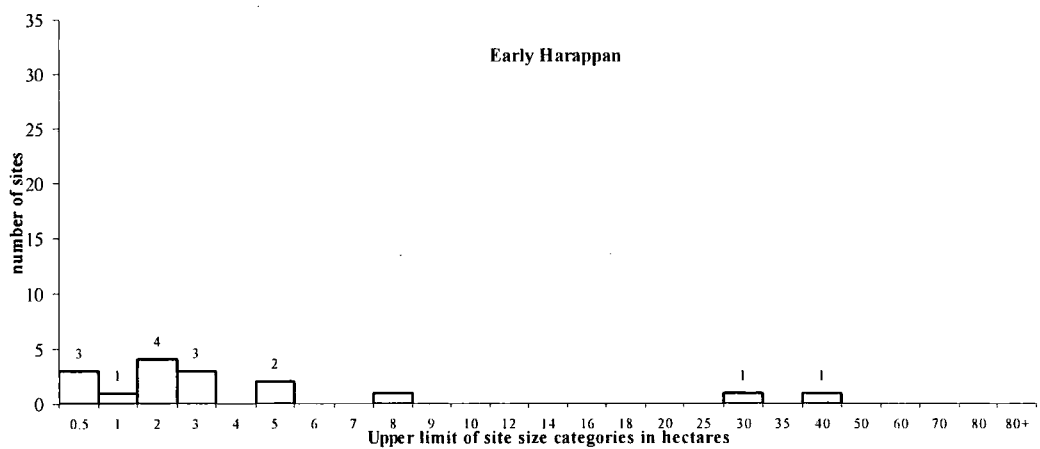


Fig. 5.19. Site size hierarchies in the Saurashtra area.

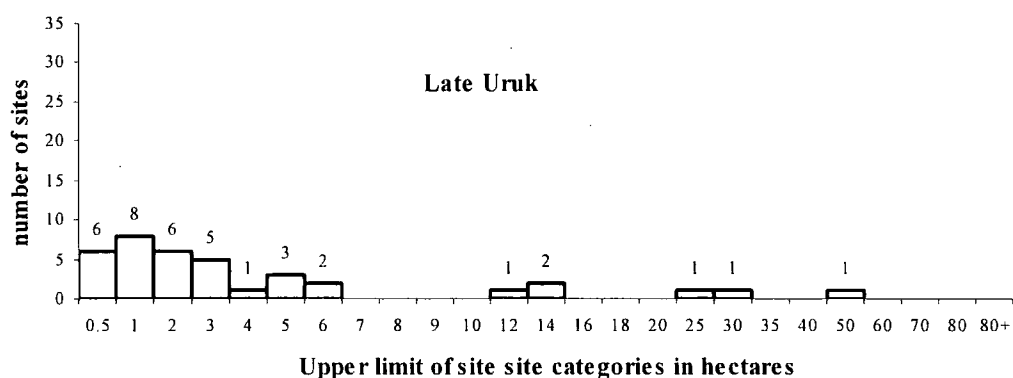
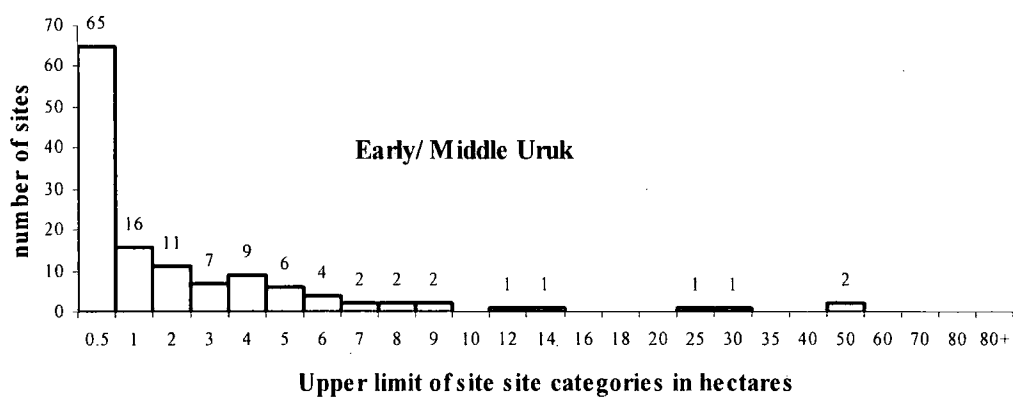


Fig. 5.20. Site size hierarchies in the Nippur-Adab area, after Adams (1981).

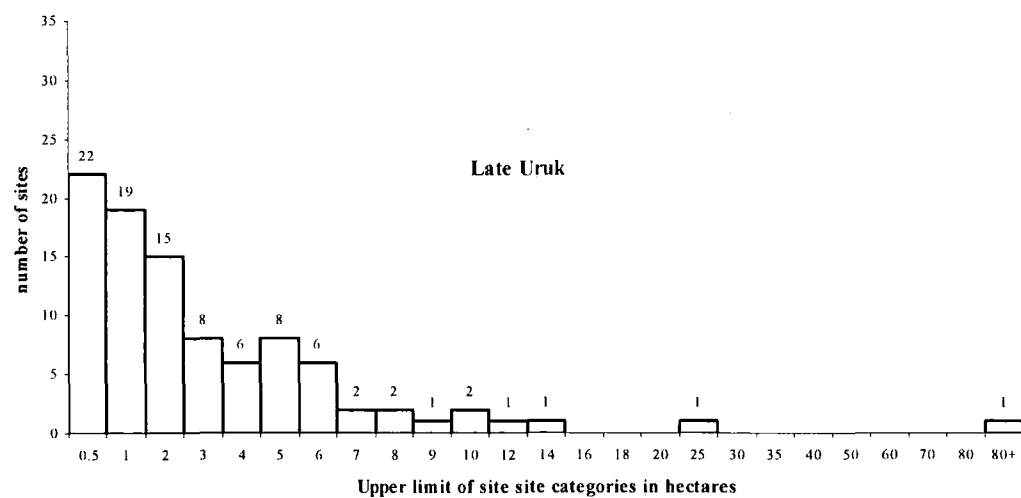
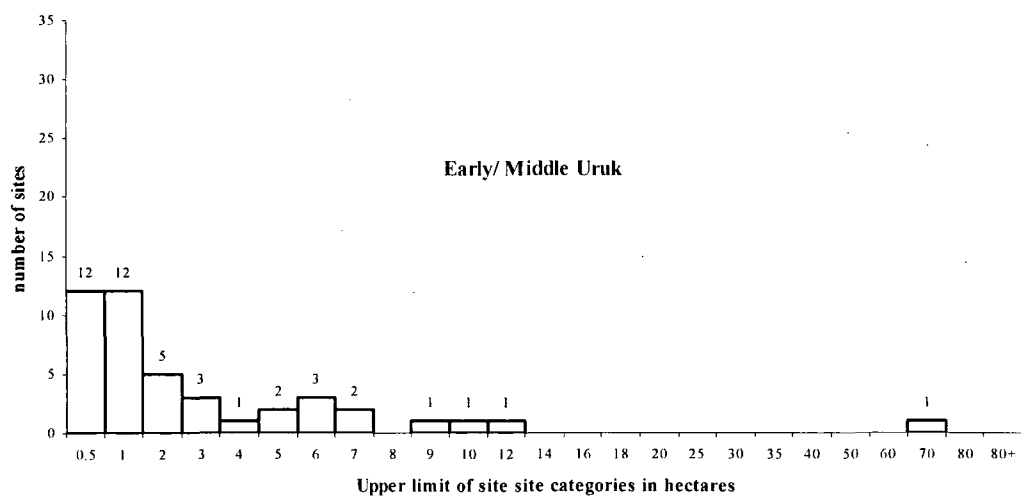


Fig. 5.21. Site size hierarchies in the Uruk-Warka area, after Adams (1981).

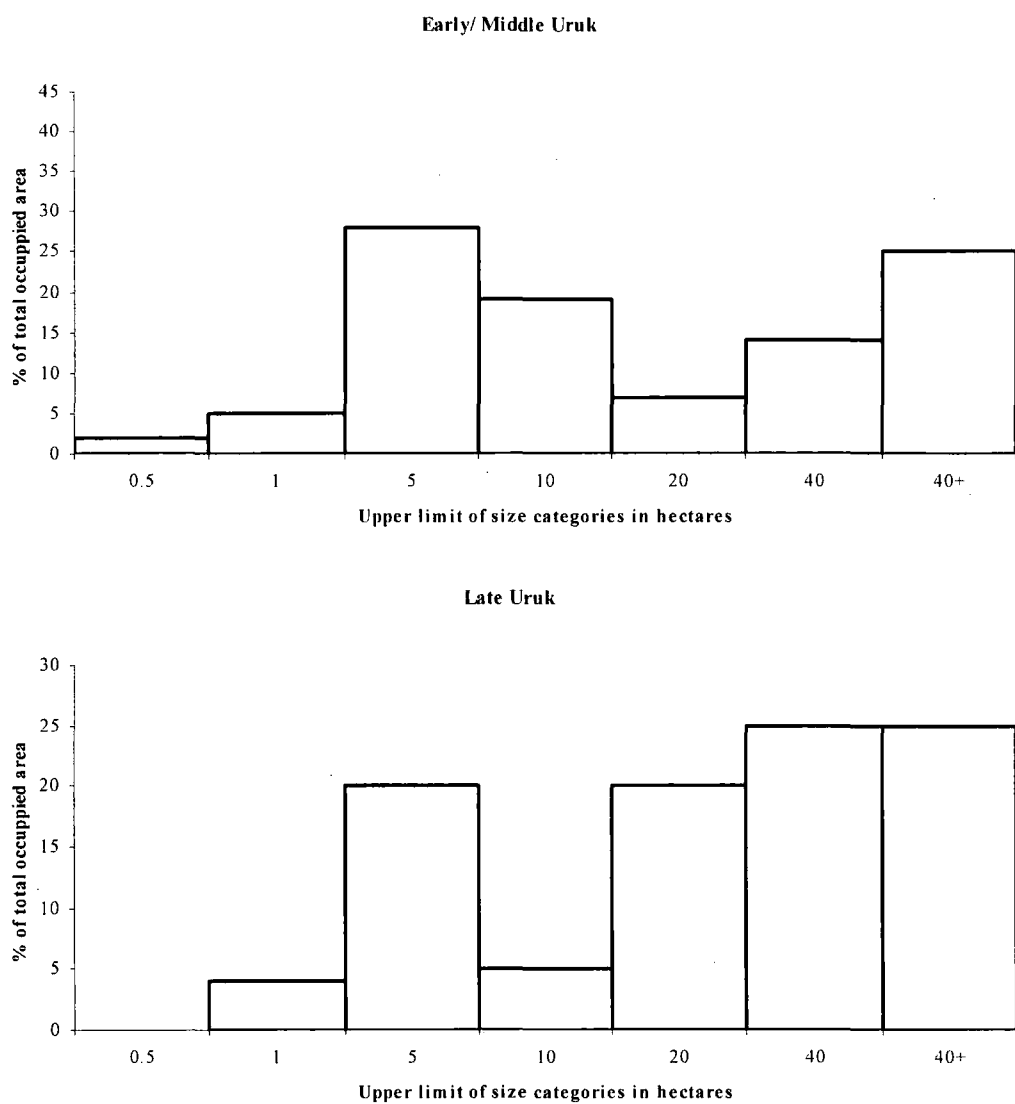


Fig. 5.22. Settlement distribution weighted by % of total settled area in the Nippur-Adab area, after Adams (1981: 73).

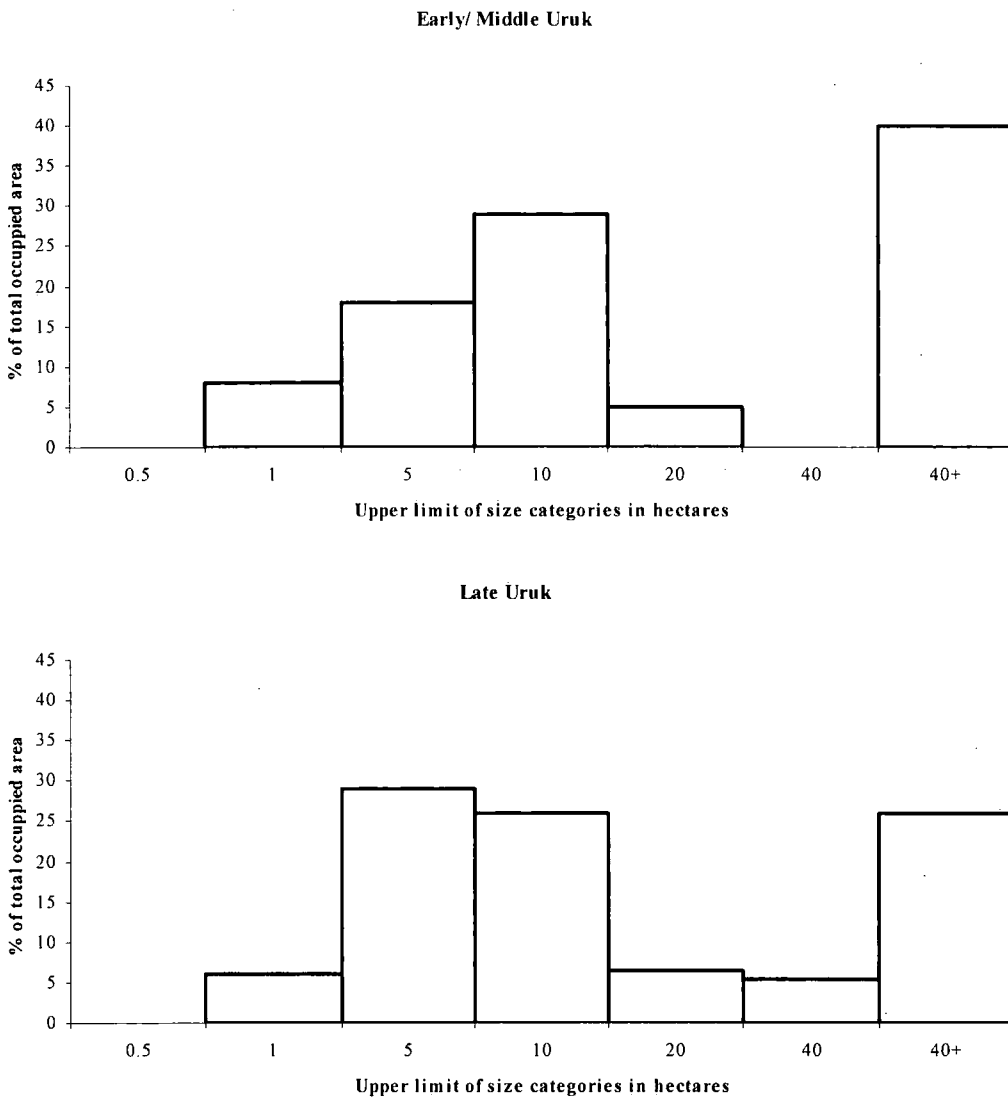


Fig. 5.23. Settlement distribution weighted by % of total settled area in the Uruk-Warka area, after Adams (1981: 73).

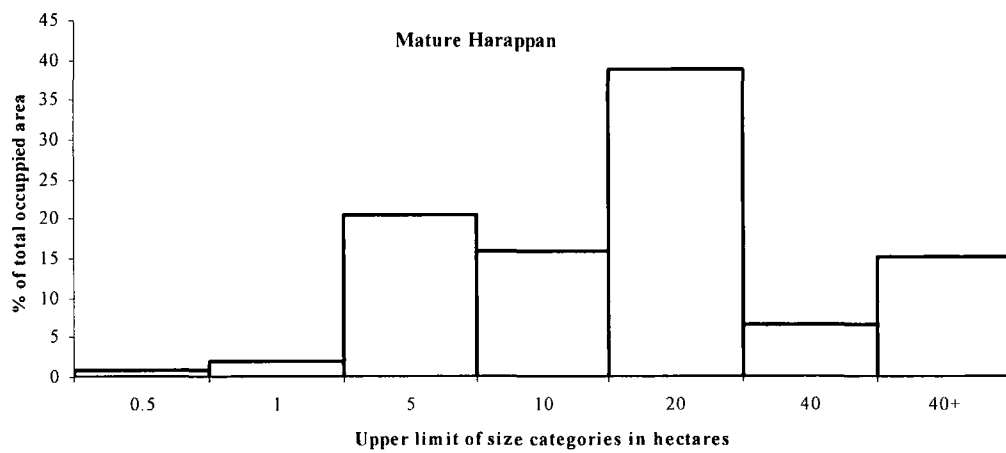
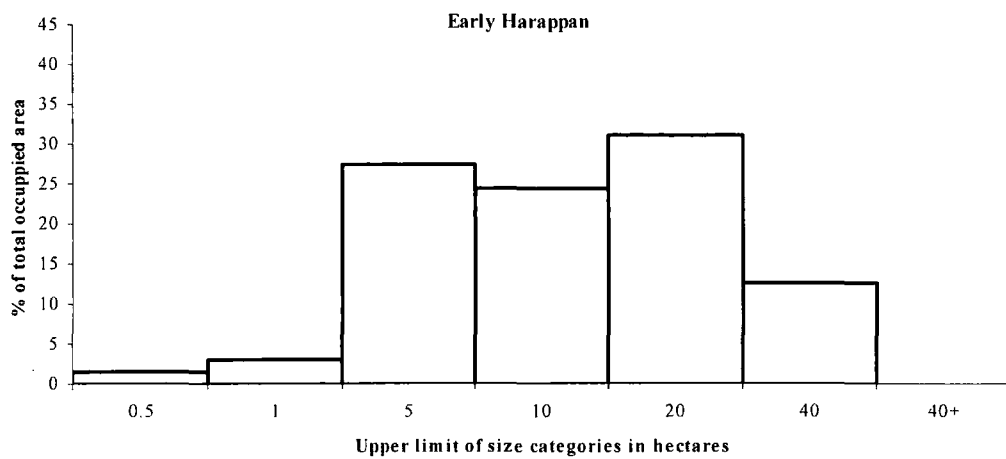


Fig. 5.24. Settlement distribution weighted by % of total settled area in the Baluchistan area, using Adams' size categories.

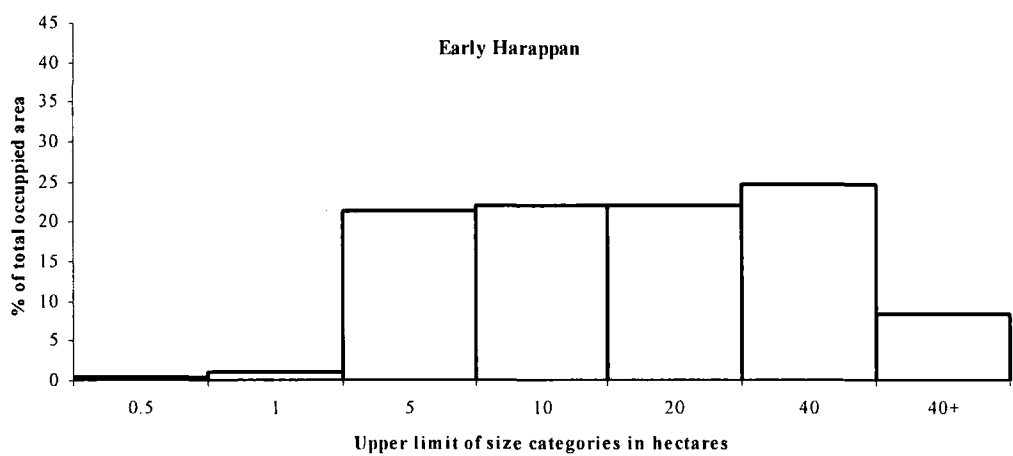
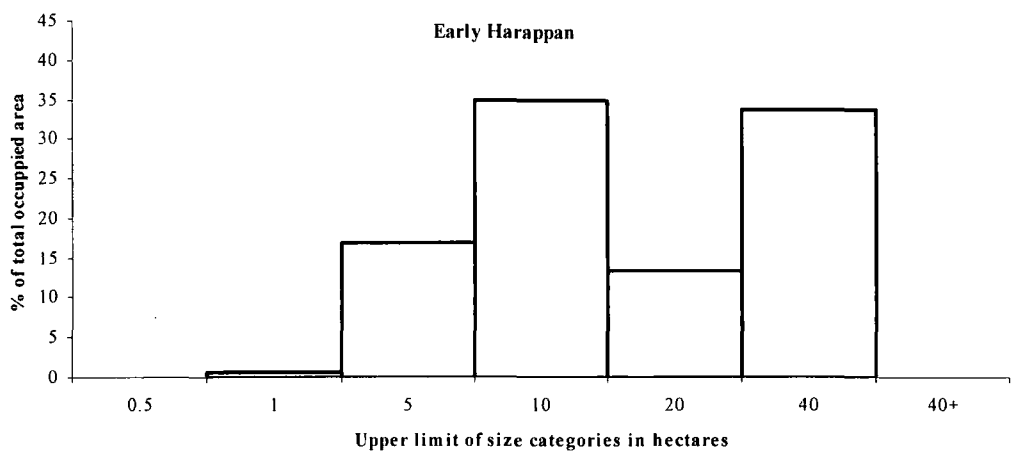


Fig. 5.25. Settlement distribution weighted by % of total settled area in the Cholistan area, using Adams' size categories.

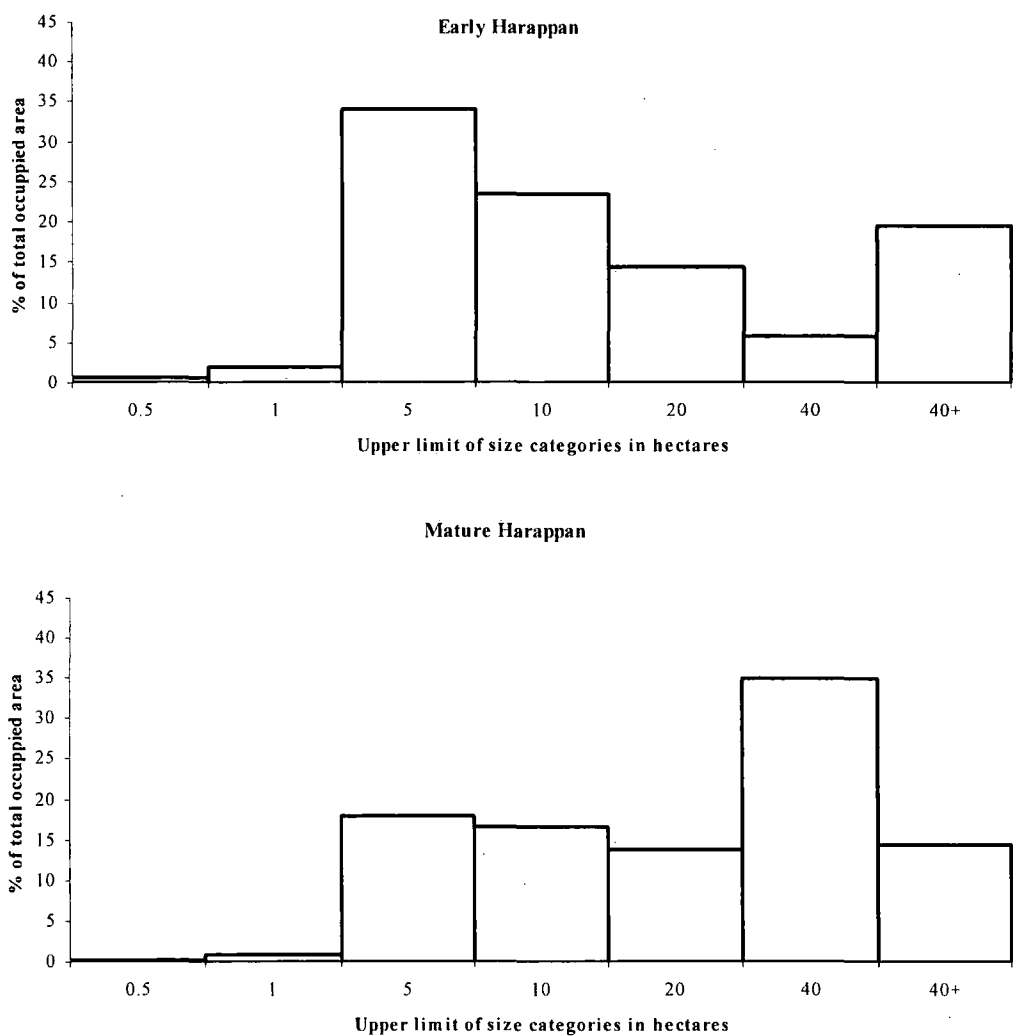


Fig. 5.26. Settlement distribution weighted by % of total settled area in the Haryana area, using Adams' size categories.

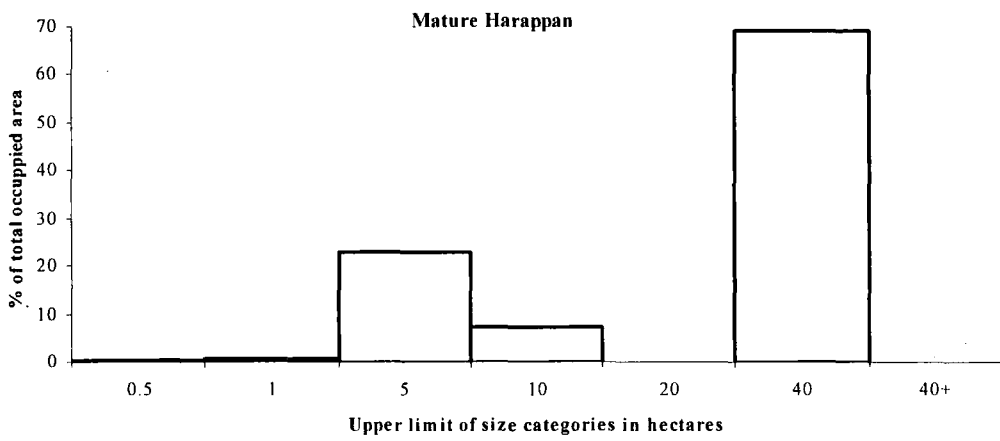
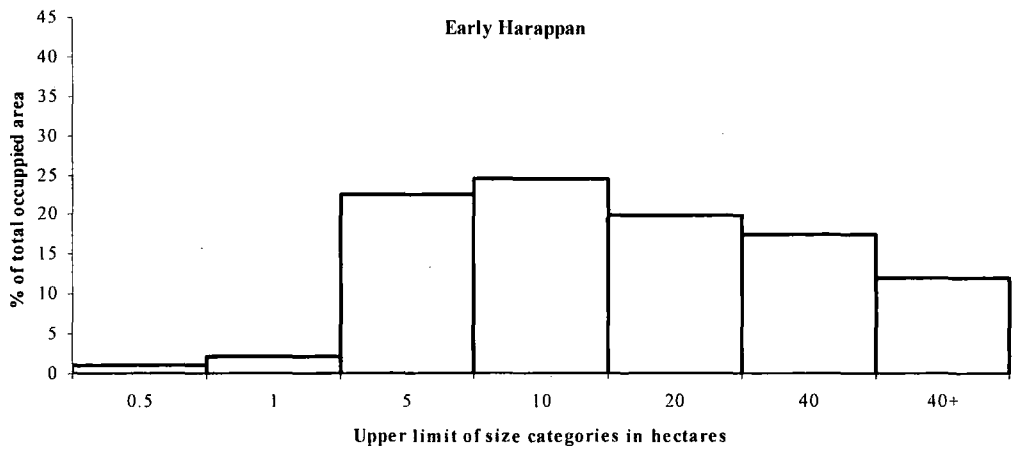


Fig. 5.27. Settlement distribution weighted by % of total settled area in the Saurashtra area, using Adams' size categories.

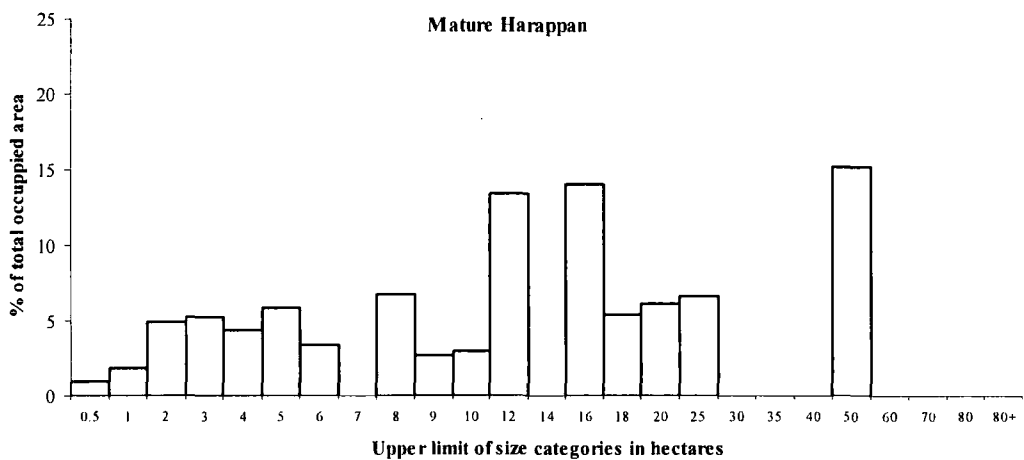
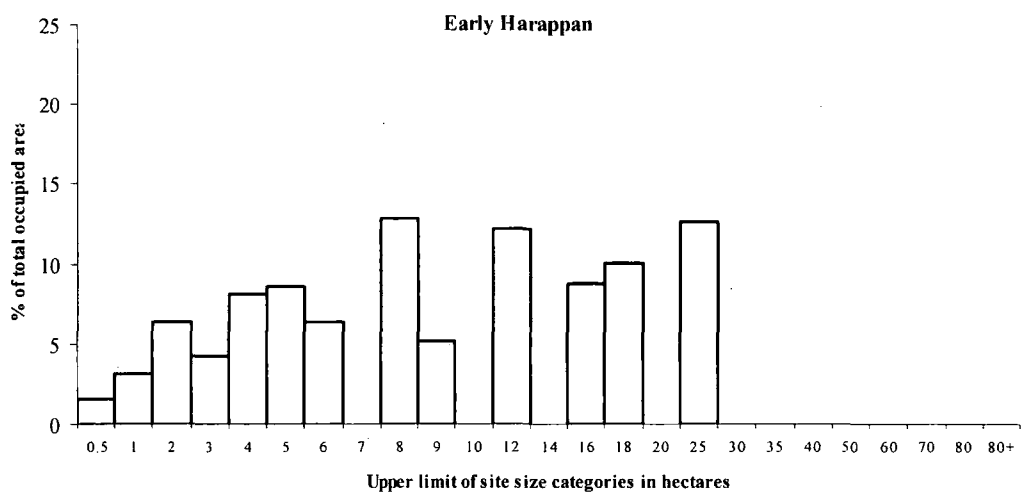


Fig. 5.28. Settlement distribution weighted by % of total settled area in the Baluchistan area.

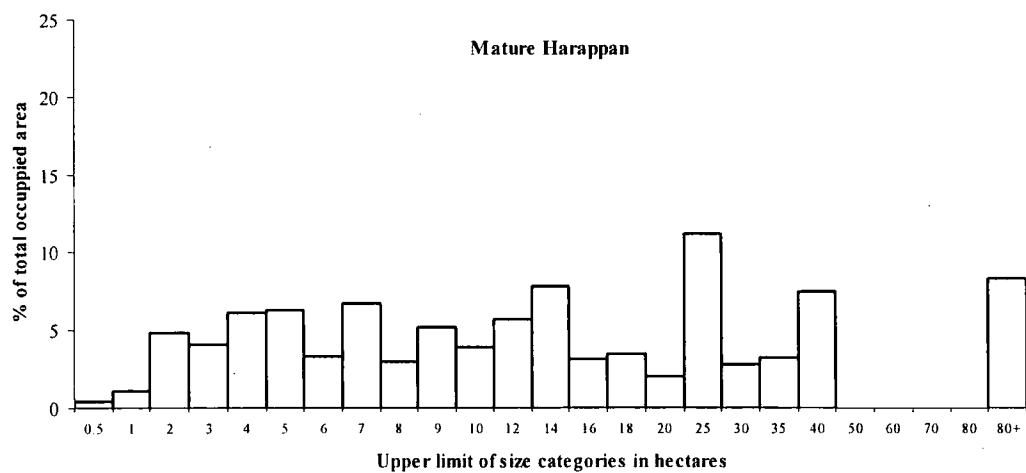
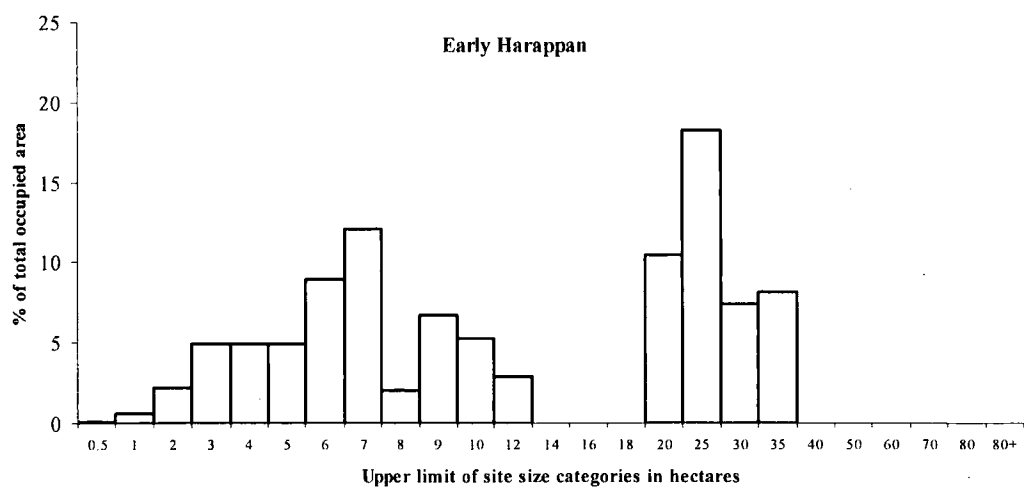


Fig. 5.29. Settlement distribution weighted by % of total settled area in the Cholistan area.

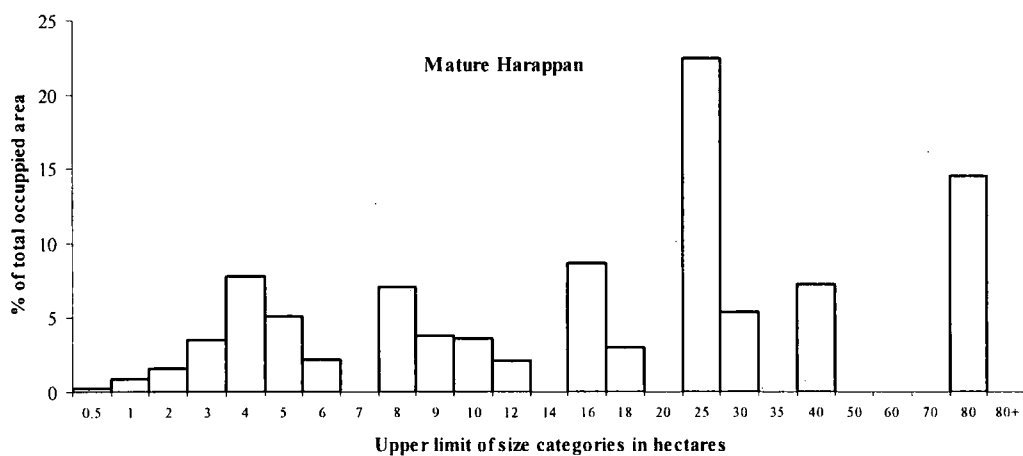
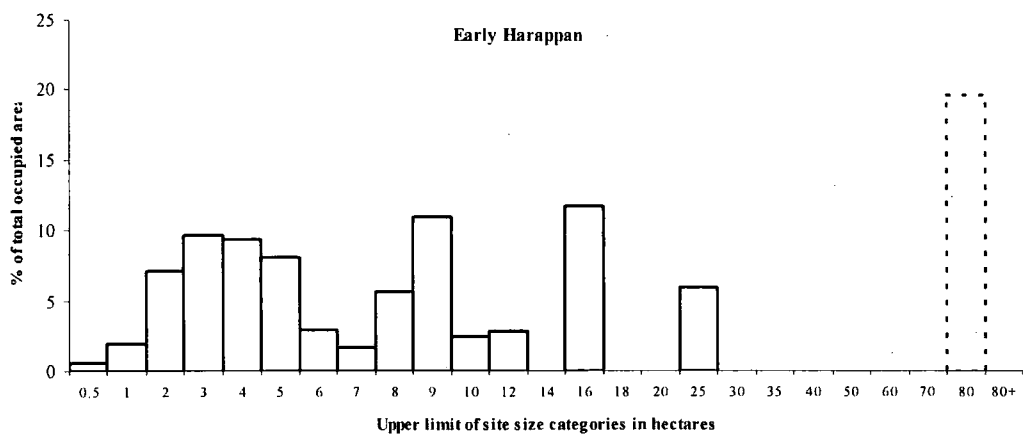


Fig. 5.30. Settlement distribution weighted by % of total settled area in the Haryana area.

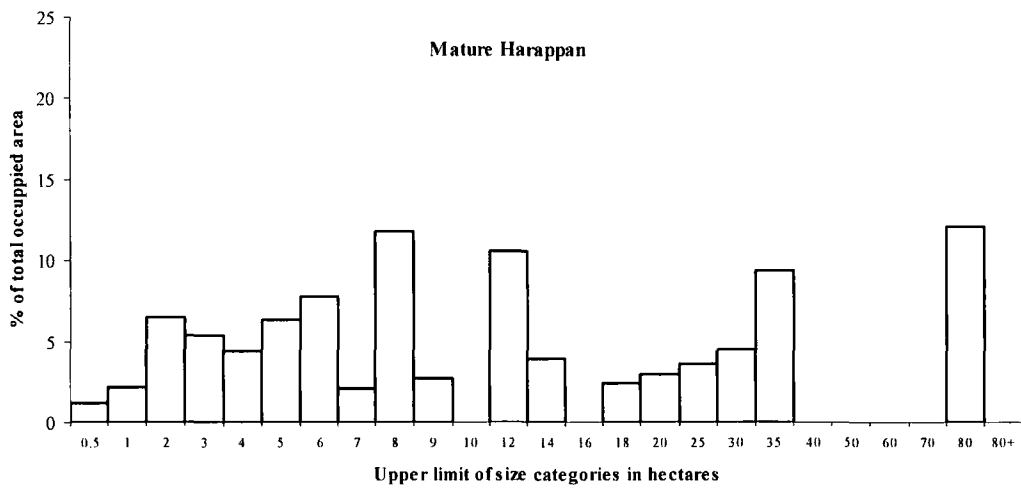
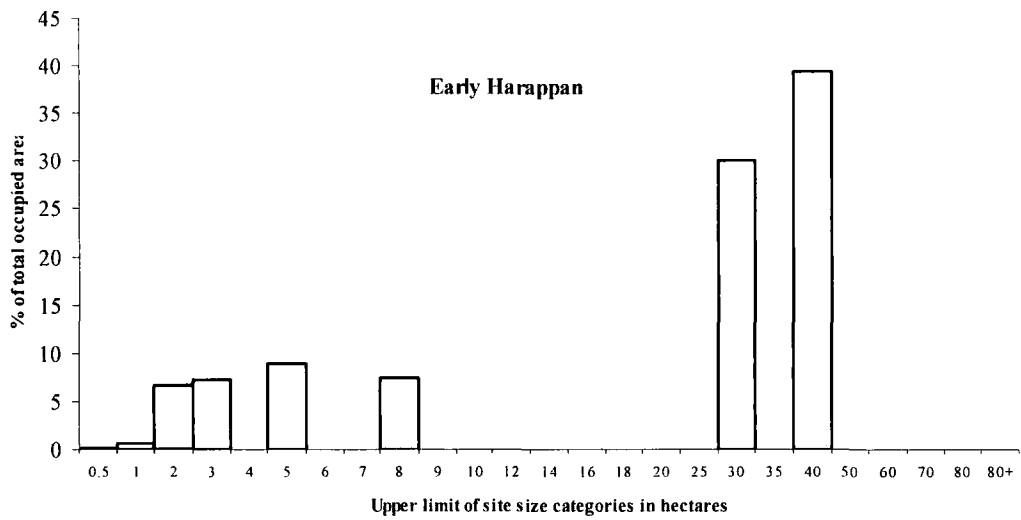


Fig. 5.31. Settlement distribution weighted by % of total settled area in the Saurashtra area.

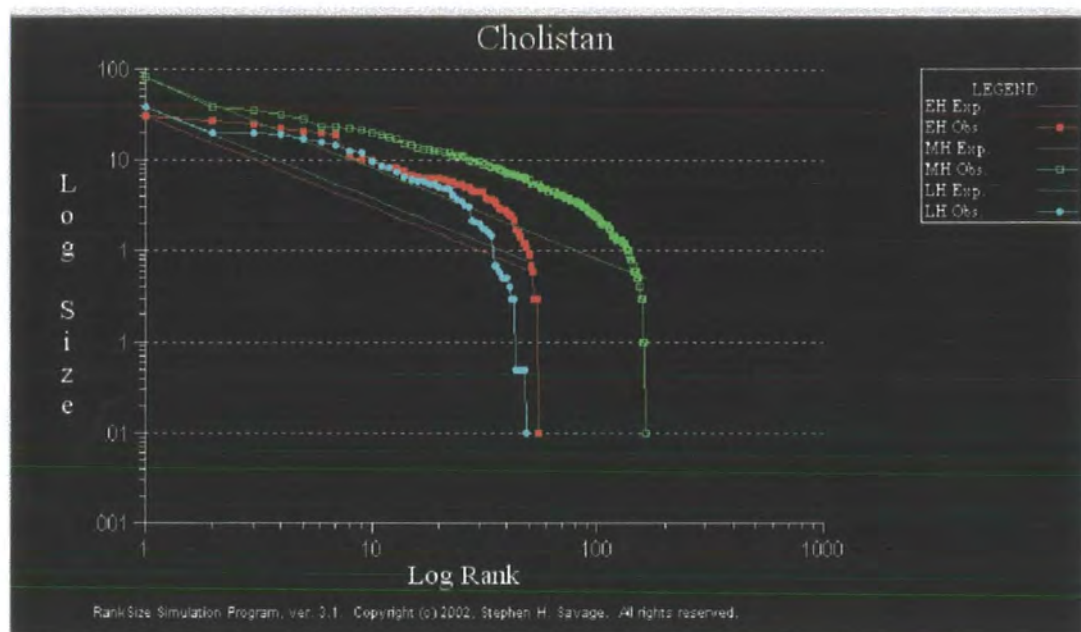


Fig. 5.32. Rank-size plot for Cholistan Area sites surveyed by Mughal.

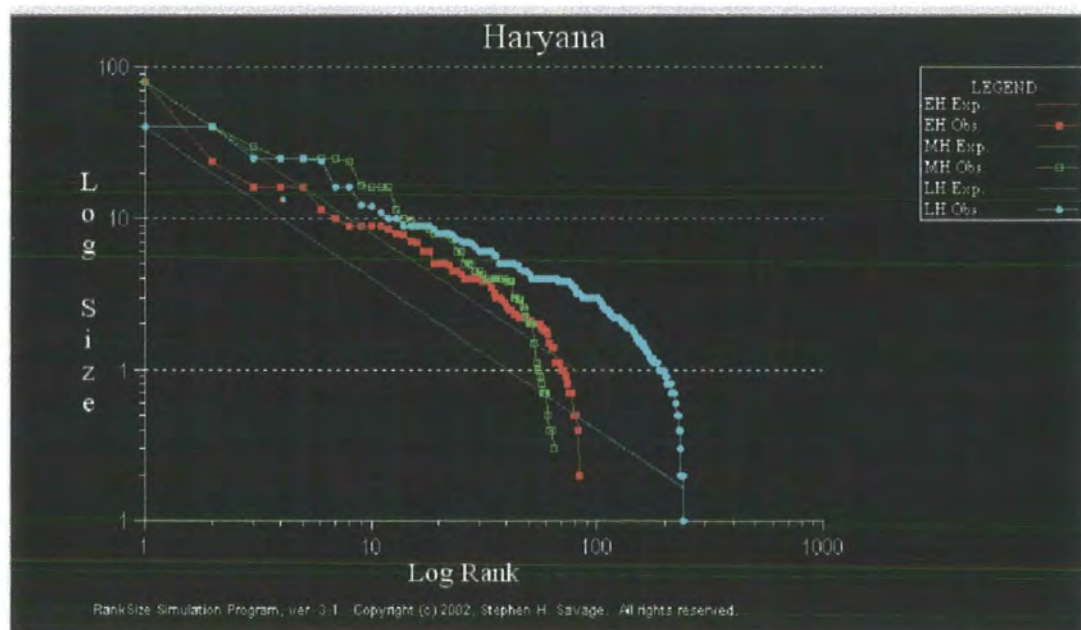


Fig. 5.33. Rank-size plot for Haryana Area.

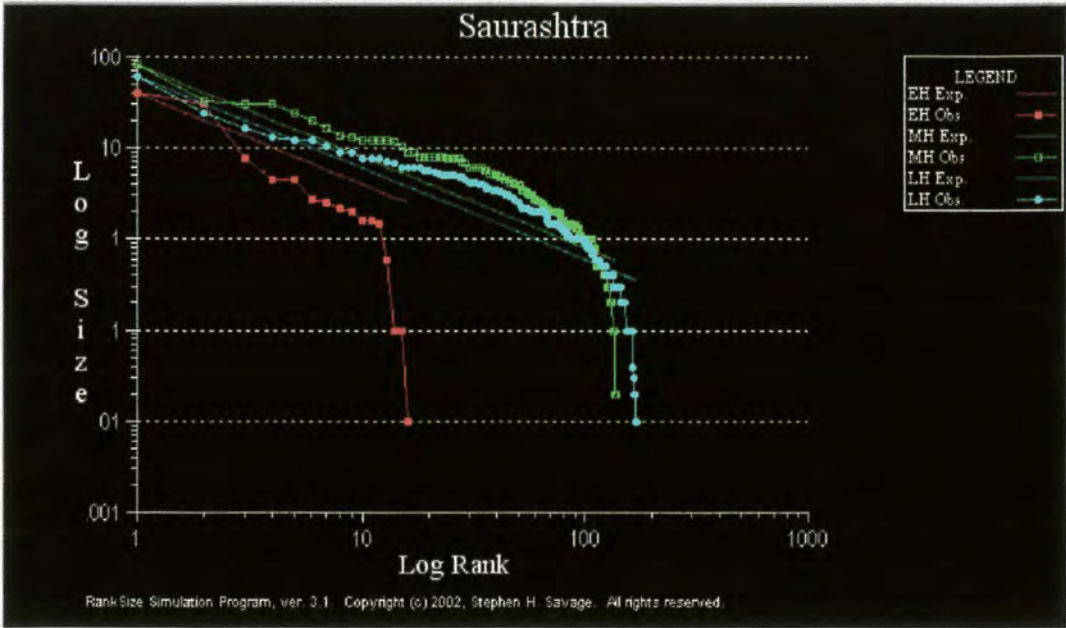


Fig. 5.34. Rank-size plot for Saurashtra and Kutch Area.

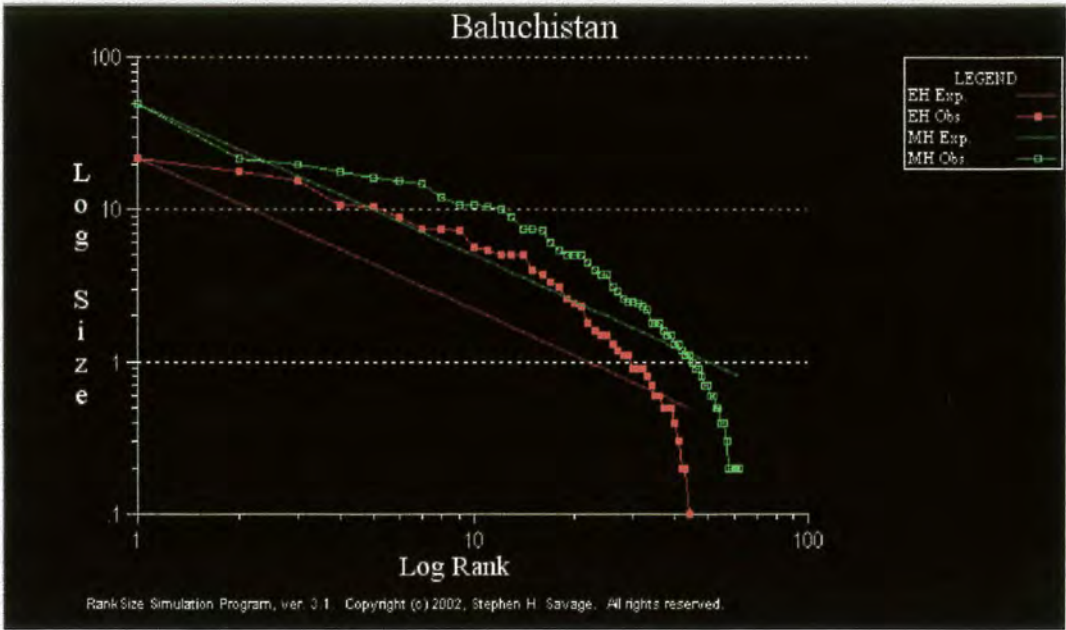


Fig. 5.35. Rank-size plot for Baluchistan Area.

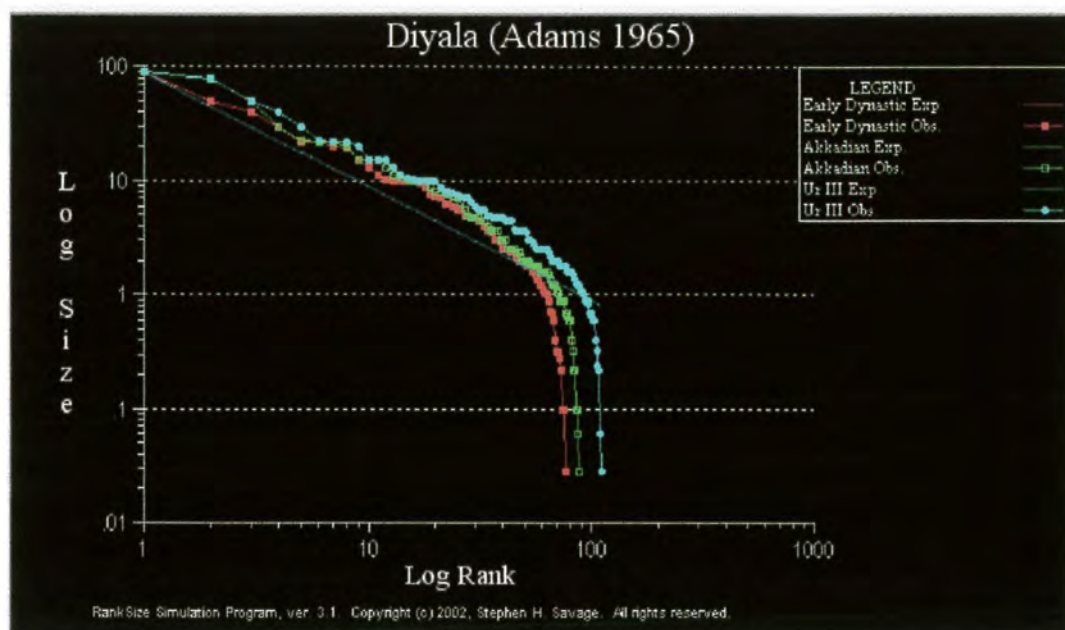


Fig. 5.36. Rank-size plot for Diyala sites surveyed by Adams (1965).

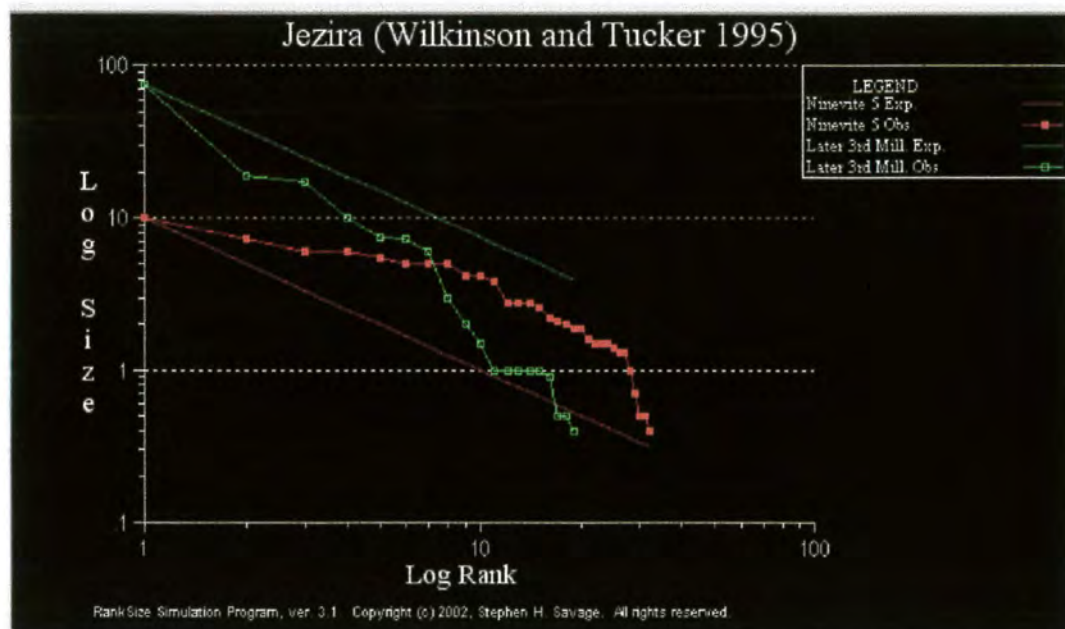


Fig. 5.37. Rank-size plot for Jezira sites surveyed by Wilkinson and Tucker (1995).

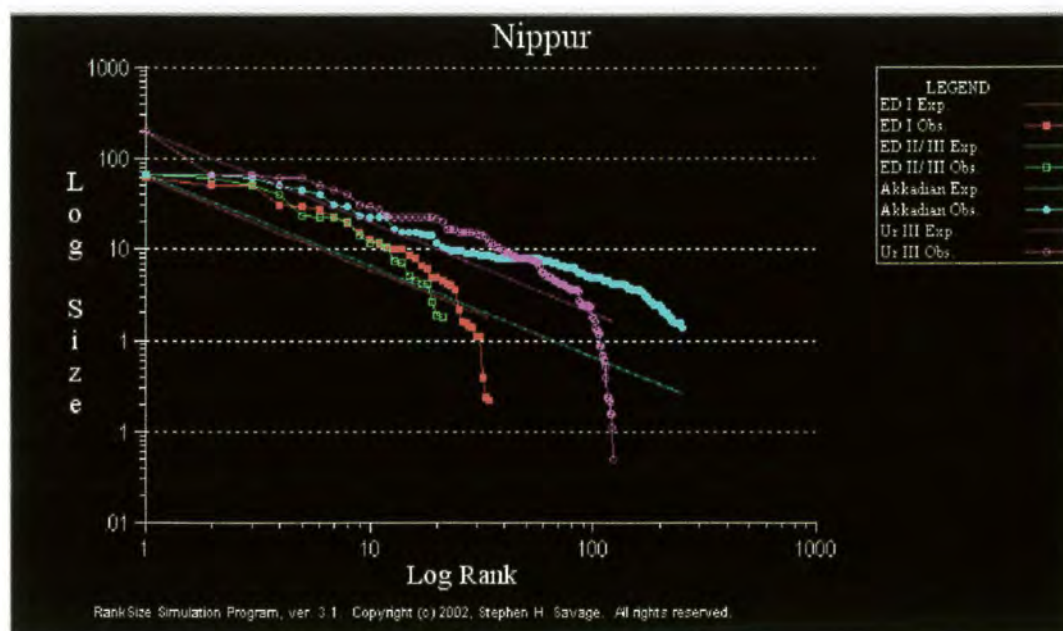


Fig. 5.38. Rank-size plot for Nippur-Adab sites surveyed by Adams (1981).

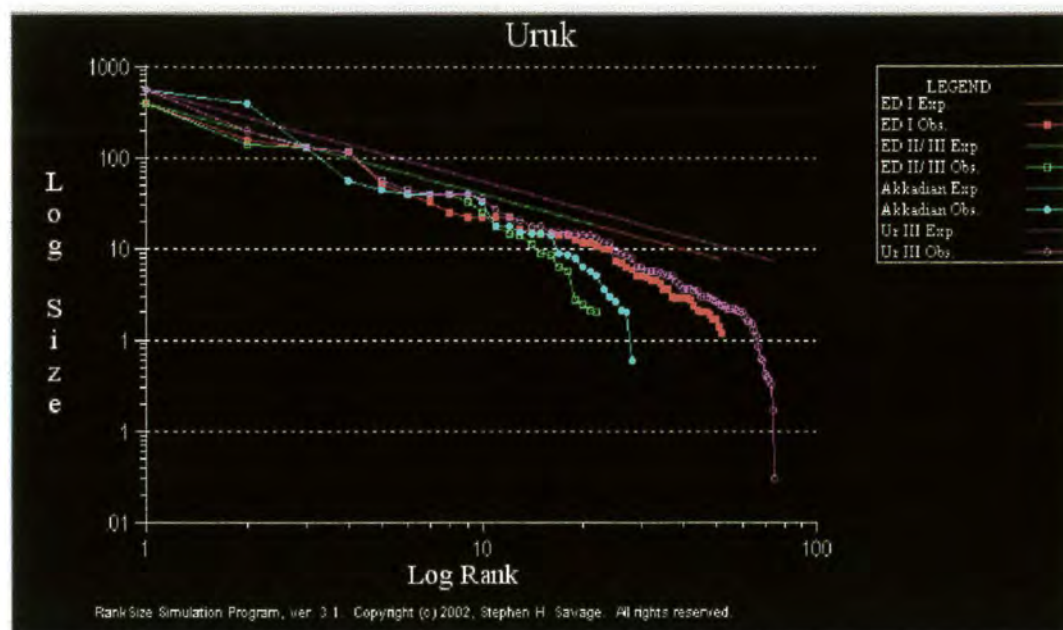


Fig. 5.39. Rank-size plot for Uruk sites surveyed by Adams and Nissen (1972).

Site	Mean House Size in m ²	Mean number of rooms	Mean Room Size in m ²	Sample Size ¹
Mohenjo Daro	152.1	9.4	16.2	86
Nausharo	76.4	5.75	13.3	12
Lothal	85	9	9.4	2
Ur	117.4	6.5	18.1	60
Nippur	98.5	6.1	16.1	9
Asmar	121.9	6.8	17.9	33
Khafajah	133.9	5	26.8	22

Table 3.1. Mean size and room numbers at the sampled sites.

City	Area	Block	House	City	Area	Block/ Street	House
Khafajah	Houses 2		a	Mohenjo Daro	HR-B	7	LII
Khafajah	Houses 2		b	Ur	AH	Niche Lane	IX
Khafajah	Houses 2		c	Ur	AH	Niche Lane	VII
Khafajah	Houses 2		d	Ur	AH	Niche Lane	II
Khafajah	Houses 2		e	Ur	AH	Paternoster Row	V
Khafajah	Houses 2		f	Ur	AH	Paternoster Row	VII
Mohenjo Daro	DK-G (S)	5	III	Ur	AH	Paternoster Row	XII
Mohenjo Daro	HR-B	3	XVII	Ur	AH	Store Lane	IV
Mohenjo Daro	HR-B	5	XXXIII	Ur	AH	Store Lane	II
Mohenjo Daro	HR-B	5	XXXIV	Ur	AH	Straight Street	II
Mohenjo Daro	HR-B	5	XXXV	Ur	AH	Bazaar Alley	I
Mohenjo Daro	HR-B	5	XXXVI	Ur	AH	Bazaar Alley	II
Mohenjo Daro	HR-B	5	XLII	Ur	AH	Bazaar Alley	III
Mohenjo Daro	HR-B	5	XLV	Ur	EM	Gay Street	N ^o 1
Mohenjo Daro	HR-B	5	XLVI	Ur	EM	Quality Lane	a
Mohenjo Daro	HR-B	5	XLVII	Nippur	TB		T

Table 3.2. Structures identified as stalls following Henrickson (1981).

¹ Figures do not include the 'Early Northern Palace' and 'Main Northern Palace' at Asmar, nor the DK-G 'Palace' and HR-A I structures at Mohenjo Daro.

	1	2	3	4	5+
Asmar	30 (96%)	1 (4%)			
Khafajah	13 (93%)	1 (7%)			
Ur	27 (71%)	10 (26%)		1 (3%)	
Nippur	7 (100%)				
Mohenjo Daro	31 (75%)	7 (17%)	3 (85%)		

Table 3.3. Frequency of external entrances to buildings.

Site		Mean Number of Doors Per Space	Sample Number
Asmar		1.05145	31
Khafajah		1.04762	14
Ur		1.16209	37
Nippur		1.08658	7
Mohenjo Daro		1.08885	41

Table 3.4. Frequency of internal entrances to buildings.

Site	Object	Number	Provenance
Shahdad	macehead	1	Cemetery A (Takab III phase).
Susa	maceheads	5	Grave in the 'Donjon', other graves.
Susa	war hammers	5	25th' Century graves, other locations.
Hissar	maceheads	2	Graves from Period IIIC.
Harappa	macehead	1	Jar 227, a copper hoard from Mound F.
Mohenjo Daro	'swords'	3	Upper levels, hoard from DK area (residential) Upper levels, uncertain example from Lower levels.

Table 4.1. Types of ‘weapons’ and their locations.

	spouted jugs	round-bottomed bowls	beakers/ cups	strainers	handled jugs	'cauldrons'
Ur (Royal Cemetery)	x	x	x	x	x	x
Kish ('A' Cemetery)	x	x	x		x	
Uruk	x	x				
Susa	x	x	x	x		x
Shahdad	x	x	x	x		
Hissar	x	x				
Mohenjo Daro		x				?
Harappa						
Chanhudaro						?

Table 4.2. The presence of metal vessels associated with liquids and drinking in larger assemblages.

Tell Sifr- Loftus hoard			
Object	Number	Object	Number
axes	3	bill-hook' blades	2
mattocks	3	chains	3
adze blades	3	flat rings (harness parts)	2
hammers	2	heavy rings (plough parts?)	8
spades	2	light rings (cattle nose rings?)	6
double-edged knives	4	sheetmetal ring	1
single-edged knives	2	vessels (some missing)	3
tanged sickles	>42		

Table 4.3. Contents of metal hoard from Tell Sifr (Loftus hoard).

Harappa- Jar 227			
Object	Number	Object	Number
axe	13	cast bars (for chisels)	2
adze	8	stilus	1
double-axe	2	scale-beam	1
dagger	10	terminal	1
macehead	1	bangle	8
spear	13	bowl	1
lancehead	1	flat strips (to make hollow bangles?)	4
arrow	1	rod (to make solid bangle?)	1
chopper	1	rectangular pieces	4
saw	2	sheet/ hammered pieces	3
chisel	10		
Mohenjo Daro- DK-G 14, House III			
Object	Number	Object	Number
vessel	15	fish-hook	1
axe	4	scale pan	1
'sword'	1	bangles	6
knife	1	coils of wire	2
spearhead	1	goat figurine	1
mirror	1	shell ball	1
chisel	5		

Table 4.4. Contents of metal hoards from Harappa, Mohenjo Daro and Chanhudaro.

Mohenjo Daro- DK-G 12A			
Object	Number	Object	Number
spearhead	5	ingot	3
chisel	2	casting	1
axe	9	lump	1
Chanhudaro- Mound II, Square 9C			
Object	Number	Object	Number
knife	14	spearhead	1
adze	3	casting	1
axe	3	shovel	1
vessel	2	bangle	1
Chanhudaro- Mound II, Square 8C			
Object	Number	Object	Number
razor	2	spatula	1
scale-pan	1	knife	1
chisel	5	ingot	1
bangle	3	axe	1

Table 4.4 (cont). Contents of selected metal hoards from Harappa, Mohenjo Daro and Chanhudaro.

	Sn		As	
	Over 1%	Over 5%	Over 1%	Over 5%
Flat Axe (n=34)	21%	12%	82%	0%
Socketed Axe (n=17)	6%	6%	47%	0%
Mean Content Flat Axes	1.23%		2.02%	
Mean Content Socketed Axes	0.57%		1.00%	

Table 4.5. Compositional differences of axe types at Susa.

Site	Period	Size attributed	Reference
Nippur	EDI, EDII/III	50ha	table; Adams 1981: Table 7.
Adab	EDI, EDII/III, Akkadian, UrIII	60ha	table; Adams 1981: Table 7. maps; Adams 1981: Figs. 21, 29-31.
Isin	EDI	10ha	table; Adams 1981: Table 7.
	EDII/III	20.1-40ha	map; Adams 1981: Fig.29.
	Akkadian	10.1-20ha	map; Adams 1981: Fig.30.
	UrIII	200+ha	map; Adams 1981: Fig.31.
Kisurra	UrIII	20.1-40ha	map; Adams 1981: Fig.31.
Wilaya	EDI	10ha	table; Adams 1981: Table 7.
	EDII/III, Akkadian, UrIII	40+ha	maps; Adams 1981: Figs.29-31.
Uruk	EDI, EDII/III, Akkadian	400+ha	maps; Adams 1981: Figs.21, 29-30.
	UrIII	40+ha	map; Adams 1981: Fig.31.
Larsa	EDI, EDII/III, Akkadian	40+ha (uncertain)	maps; Adams 1981: Figs.21, 29-30.
	UrIII	400+ha	map; Adams 1981: Fig.31.
Shuruppak	EDI	25ha	table; Adams 1981: Table 7.
	EDII/III	occupation doubtful	map; Adams 1981: Fig.29.
	Akkadian	40+ha	map; Adams 1981: Fig 30.
Tell Asmar	ED, Akkadian, Isin-Larsa	40ha (c.40 100x100m squares)	plan; Delougaz 1952: Plate 201.
Tell Agrab	ED, Isin-Larsa	40.7ha (c.407 10x10m squares)	plan; Delougaz 1952: Plate 202.

Table 5.1. Unclear site sizes in Adams' databases.

Survey	Area	Number of sites	Sites per 100 Km ²
Nippur-Adab (EDI)	3'450Km ²	34	1
Uruk Warka (EDI)	2'800Km ²	58	2.1
Diyala (EDI)	8'000km ²	76	0.95
Cholistan	25'000Km ²	166	0.66
Haryana	75'000Km ²	147	0.2
Saurashtra	100'000Km ²	270	0.27
Baluchistan	80'000Km ²	101	0.13

Table 5.2. Size and site densities of the compared areas.

Area/ survey	Period	Probability of having derived from log-normal distribution	Site recovery rate
Baluchistan	Mature Harappan	0.88	66%
Cholistan	Mature Harappan	<.0001	66%
Saurashtra	Mature Harappan	0.81	66%
Haryana	Mature Harappan	0.11	66%
Diyala	ED	0.94	70%
	Akkadian	0.98	70%
	UrIII	0.51	70%
Nippur	EDI	0.31	70%
	EDII/III	0.04	70%
	Akkadian	<.0001	70%
	UrIII	0.73	70%
Uruk	EDI	<.0001	70%
	EDII/III	<.0001	70%
	Akkadian	<.0001	70%
	UrIII	<.0001	70%
Jezira	Ninevite 5	<.0001	70%
	Later 3rd Mill.	<.0001	70%

Table 5.3. Monte-Carlo simulation results for rank-size analyses.

Network	Corporate
Concentrated wealth	More even wealth distribution
Individual power	Shared power arrangements
Ostentatious consumption	More balanced accumulation
Prestige goods	Control of knowledge, cognitive codes
Patron/client factions	Corporate labour systems
Attached Specialization	Emphasis on food production
Wealth finance	Staple finance
Princely burials	Monumental ritual spaces
Lineal kinship systems	Segmental organization
Power inherited through personal glorification	Power embedded in group association/affiliation
Ostentatious elite adornment	Symbols of office
Personal glorification	Broad concerns with fertility, rain

Table 6.1. Tendencies of corporate and network power strategies, after Feinman et al (2000: 453).

